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Certifications

**WBENC:** 237019

HUB:

1752439743100-86536

**DBE:** VN 20657

**NCTRCA** WFWB38444Y0909

**NELAP Certifications** 

Lubbock: T104704219-08-TX El Paso:

T104704221-08-TX

Midland: T104704392-08-TX

LELAP-02003

LELAP-02002 Kansas E-10317

# Analytical and Quality Control Report

**Brad Davis** Zia Engineering & Environmental 755 S. Telshor Blvd. Suite F-201 Las Cruces, NM, 88011

Report Date: May 6, 2009

Work Order: 9041322

Project Name: HELSTF Diesel Spill Groundwater

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis,

Inc.

			$\operatorname{Date}$	$\operatorname{Time}$	$\operatorname{Date}$
$_{ m Sample}$	Description	Matrix	$\operatorname{Taken}$	$\operatorname{Taken}$	Received
$\overline{192905}$	HLSF-0154-HCF-005-0409	water	2009-04-09	12:20	2009-04-09

# Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 76 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

#### Notes:

For inorganic analyses, the term MQL should actually read PQL.

# Standard Flags

- ${f U}\,$  Not detected. The analyte is not detected above the SDL.
- ${f J}$  Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
- B The sample contains less than ten times the concentration found in the method blank.
- ${f JB}$  The analyte is positively identified and the value is approximated between the SDL and MQL.
  - The sample contains less than ten times the concentration found in the method blank.

The result should be considered non-detect to the SDL.

Michael April

Dr. Blair Leftwich, Director

# Case Narrative

Samples for project HELSTF Diesel Spill Groundwater were received by TraceAnalysis, Inc. on 2009-04-09 and assigned to work order 9041322. Samples for work order 9041322 were received intact without headspace and at a temperature of 9.0 deg. C.

Samples were analyzed for the following tests using their respective methods.

		$\operatorname{Prep}$	$\operatorname{Prep}$	QC	Analysis
Test	Method	$\operatorname{Batch}$	Date	$\operatorname{Batch}$	Date
Ag, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15 at 16:30
Alkalinity	SM 2320B	50159	2009-04-14 at 10:00	58762	2009-04-14 at $10:00$
Al, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
${ m Ammonia}$	SM 4500-NH3 B,C	50102	2009-04-16 at 13:00	58694	2009-04-16 at $14:00$
As, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
Ba, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
Be, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
Bromide (IC)	$\to 300.0$	50331	2009-04-16 at $04:18$	58966	2009-04-16  at  04:18
Ca, Total	S 6010B	49975	2009-04-14 at 11:52	58667	2009-04-17  at  10.57
Cd, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
Chloride (IC)	E 300.0	50331	2009-04-16 at 04:18	58966	2009-04-16  at  04:18
Chromium, Hexavalent	$\mathrm{SM}$ 3500- $\mathrm{Cr}$ B	50088	2009-04-10 at $09:32$	58672	2009-04-10  at  09:32
Co, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
Cr, Dissolved	S 6010B	50044	2009-04-16 at $11:11$	58656	2009-04-17  at  09:30
Cr, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
Cu, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
Explosives (8330)	S 8330-C18	50476	2009-04-14 at 15:00	59150	2009-04-27  at  19:54
Fe, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
Fluoride (IC)	E 300.0	50331	2009-04-16 at 04:18	58966	2009-04-16  at  04:18
Hg, Total	S 7470A	50149	2009-04-20 at $15:55$	58752	2009-04-20 at $17:51$
K, Total	S 6010B	49975	2009-04-14 at 11:52	58667	2009-04-17  at  10.57
Mg, Total	S 6010B	49975	2009-04-14 at 11:52	58667	2009-04-17  at  10.57
Mn, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
Mo, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
Na, Total	S 6010B	49975	2009-04-14 at 11:52	58667	2009-04-17  at  10.57
Ni, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
Nitrate and Nitrite as N	SM $4500\text{-NO3}$ E	50167	2009-04-17 at 14:00	58776	2009-04-17  at  17:00
O/G	$\to 1664$	50291	2009-04-23 at $14:00$	58921	2009-04-24 at $15:30$
Pb, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
pH	SM 4500-H+	49958	2009-04-10 at 10:00	58513	2009-04-10  at  10:00
P, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
Sb, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
Semivolatiles	S 8270C	50042	2009-04-13 at 15:00	58615	2009-04-16  at  09:44
Se, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
SO4 (IC)	E 300.0	50331	2009-04-16 at 04:18	58966	2009-04-16  at  04:18
TDS	SM 2540C	50067	2009-04-14 at $19:05$	58649	2009-04-16 at $18:18$
TKN	$\to 351.3$	50105	2009-04-17 at 15:00	58769	2009-04-20 at $11:00$
Tl, Total	S 6010B	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
TOC	SM 5310C	50124	2009-04-20 at $09:50$	58713	2009-04-20 at $09:50$
Total Cyanide	SM 4500-CN $C,E$	50107	2009-04-17 at 10:30	58704	2009-04-17  at  16:00
TPH DRO	Mod. 8015B	49961	2009-04-13 at 15:00	58516	2009-04-13 at 17:00

		$\operatorname{Prep}$	$\operatorname{Prep}$	QC	${ m Analysis}$
Test	${f Method}$	$\operatorname{Batch}$	$\operatorname{Date}$	$\operatorname{Batch}$	Date
TPH GRO	S~8015B	50027	2009-04-15 at 14:23	58597	2009-04-15  at  14:23
V, Total	$S_{010B}$	49975	2009-04-14 at 11:52	58610	2009-04-15  at  16:30
Zn, Total	$S_{6010B}$	49975	2009-04-14 at $11:52$	58610	2009-04-15  at  16:30

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9041322 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

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HELSTF Diesel Spill Groundwater

# **Analytical Report**

Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analytical Method: Analysis: Ag, Total S 6010B Prep Method: S 3010A QC Batch: RR58610 Date Analyzed: 2009-04-15 Analyzed By: Prep Batch: 49975 Sample Preparation: 2009-04-14 Prepared By: KV

SDLMQLMethod Based Based Blank MQLMDL SDLParameter Result Result Result Units Dilution (Unadjusted) (Unadjusted) Flag Total Silver 0.00111 0.00111 < 0.00111 < 0.00500< 0.00111mg/L0.005

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Al, Total Analytical Method: S 3010A Analysis: S 6010B Prep Method: QC Batch: 58610 Date Analyzed: Analyzed By: 2009-04-15 RRPrep Batch: 49975Sample Preparation: 2009-04-14 Prepared By: KV

SDLMethod MQL Based Based Blank MQL MDLFlag Parameter Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Aluminum < 0.00301 < 0.0500< 0.00301 mg/L0.003010.050.00301

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: El Paso

Analysis: Alkalinity Analytical Method: SM 2320BPrep Method: N/AQC Batch: 58762 Date Analyzed: 2009-04-14 Analyzed By: JGPrep Batch: 50159 Sample Preparation: Prepared By: 2009-04-14 JR

SDLMQLMethod Based Based Blank MQLMDL Flag Parameter Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Hydroxide Alkalinity mg/L as CaCo3 < 1.00 <1.00 < 1.00 1.00 1 1 UCarbonate Alkalinity < 1.00 < 1.00 < 1.00mg/L as CaCo3 1 1.00 1 1 Bicarbonate Alkalinity 2660 2660 < 4.00 mg/L as CaCo3 4.00 4 4 1 2660 mg/L as CaCo3Total Alkalinity 2660 < 4.001 4.00 4 4

#### Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Analytical Method: SM 4500-NH3 B,C Prep Method: N/AAmmonia QC Batch: 58694 Date Analyzed: 2009-04-16 Analyzed By: AHPrep Batch: 50102 Sample Preparation: Prepared By: AH

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HELSTF Diesel Spill Groundwater

		SDL	MQL	Method					
		Based	Based	Blank				MQL	$\mathrm{MDL}$
Parameter	Flag	Result	Result	Result	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Ammonia-N	J	0.728	<1.00	< 0.353	mg/L	1	0.353	1	0.353

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: As, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RRPrep Batch: 49975 Sample Preparation: Prepared By: KV2009-04-14 SDLMQL Method Based Based Blank MQLMDL Parameter Result Result Result Units Dilution SDL Flag (Unadjusted) (Unadjusted)

mg/L

0.00448

0.01

0.00448

< 0.00448

# Sample: 192905 - HLSF-0154-HCF-005-0409

< 0.00448

< 0.0100

Laboratory: Lubbock

Total Arsenic

Analysis: Ba, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RRPrep Batch: 49975 Sample Preparation: 2009-04-14 Prepared By: KV

SDLMQLMethod MDL Based Based Blank MQLParameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Barium 0.02000.0200< 0.00105 0.001050.005 0.00105 mg/L1

#### Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Be, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RRPrep Batch: 49975 Sample Preparation: 2009-04-14 Prepared By: KV

SDLMQLMethod MQLMDL Based Based Blank Parameter Flag Result Result Result Dilution SDL(Unadjusted) Units (Unadjusted) Total Beryllium < 0.000450 < 0.00200 < 0.000450 mg/L0.0004500.002 0.00045

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: El Paso

Analysis: Bromide (IC) Analytical Method: E 300.0 Prep Method: N/A

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HELSTF Diesel Spill Groundwater

QC Batch: Prep Batch:	58966 50331			Date Anal Sample Pr	•	2009-04-16 2009-04-16		Analyzed By: JR Prepared By: JR		
		$\operatorname{SDL}$	MQL	Method						
		$\operatorname{Based}$	Based	Blank				MQL	$\mathrm{MDL}$	
Parameter	$\operatorname{Flag}$	Result	Result	$\operatorname{Result}$	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)	
Bromide	U	< 0.197	<1.35	< 0.197	$_{ m mg/L}$	5	0.197	0.27	0.0394	

Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Ca, Total S 3010A Analysis: Analytical Method: S 6010B Prep Method: QC Batch: 58667 Date Analyzed: 2009-04-17 Analyzed By: RRPrep Batch: 49975 Sample Preparation: 2009-04-14 Prepared By: KV

SDLMQLMethod Based Based Blank MQLMDL Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Calcium 87.5 87.5 < 0.117mg/L0.117 0.117 1 1

Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Cd, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: Analyzed By: 58610 Date Analyzed: 2009-04-15 RRPrep Batch: 49975 Sample Preparation: 2009-04-14 Prepared By: KV

SDLMQLMethod Based Based Blank MQLMDL Parameter Flag Result Result ResultUnits Dilution SDL(Unadjusted) (Unadjusted) Total Cadmium < 0.000303 < 0.00200 < 0.000303 0.0003030.0020.000303mg/L

Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: El Paso

Analysis: Chloride (IC) Analytical Method: E 300.0 Prep Method: N/AQC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JRPrep Batch: 50331 Sample Preparation: Prepared By: JR2009-04-16

SDLMQLMethod Based Based Blank MQL MDLParameter Flag Result Result Result  $\operatorname{Units}$ Dilution SDL(Unadjusted) (Unadjusted) Chloride 490 490 <32.0 mg/L50 32.0 1.22 0.6404

Sample: 192905 - HLSF-0154-HCF-005-0409

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HELSTF Diesel Spill Groundwater

N/A

MD

JR

El Paso Laboratory: Analysis: Chromium, Hexavalent Analytical Method: SM 3500-Cr B Prep Method: QC Batch: Date Analyzed: 2009-04-10 Analyzed By: 58672 Prep Batch: 50088 Sample Preparation: 2009-04-10 Prepared By:

SDLMQL Method Based Based Blank MQLMDL Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Hexavalent Chromium < 0.00594< 0.0125 < 0.00594 mg/L0.005940.0125 0.00594

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Co, Total Analytical Method: S 6010B Prep Method: S 3010A 2009-04-15 QC Batch: 58610 Date Analyzed: Analyzed By: R.R. Prep Batch: 49975 Sample Preparation: 2009-04-14 Prepared By: KV

SDLMQL Method Based MQLMDLBased Blank Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Cobalt < 0.000822 < 0.00200 < 0.000822 mg/L0.0008220.002 0.000822

#### Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analytical Method: Prep Method: Analysis: Cr, Dissolved S 6010B S 3005A QC Batch: 58656 Date Analyzed: 2009-04-17 Analyzed By: RRPrep Batch: 50044 Sample Preparation: 2009-04-16 Prepared By: KV

SDLMQL Method Based Based Blank MQLMDL Flag SDL Parameter Result Result Result Units Dilution (Unadjusted) (Unadjusted) Dissolved Chromium 0.006000.00600 < 0.000583 mg/L0.0005830.001 0.000583

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Cr. Total Analytical Method: S 3010A Analysis: S 6010B Prep Method: QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RRPrep Batch: 49975Sample Preparation: 2009-04-14 Prepared By: KV

SDLMQL Method Based Based Blank MQLMDLParameter Result Result SDLFlag Result Units Dilution (Unadjusted) (Unadjusted) Total Chromium 0.006000.00600< 0.000583 mg/L0.0005830.0050.000583

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analytical Method: Analysis: Cu, Total S 6010B Prep Method: S 3010A QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RRPrep Batch: 49975Sample Preparation: 2009-04-14 Prepared By: KV

 $\mathrm{SDL}$   $\mathrm{MQL}$   $\mathrm{Method}$ 

		$\operatorname{Based}$	$\mathbf{Based}$	$\operatorname{Blank}$				MQL	MDL
Parameter	$\operatorname{Flag}$	Result	$\operatorname{Result}$	Result	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Total Copper	U	< 0.000843	< 0.00500	< 0.000843	mg/L	1	0.000843	0.005	0.000843

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Explosives (8330) Analytical Method: S 8330-C18 Prep Method: S 3535A QC Batch: 59150 Date Analyzed: 2009-04-27 Analyzed By: DSPrep Batch: Sample Preparation: 2009-04-14 Prepared By: DS50476

		$\operatorname{SDL}$	MQL	Method					
		$\operatorname{Based}$	$\operatorname{Based}$	$\operatorname{Blank}$				$\mathrm{MQL}$	$\mathrm{MDL}$
Parameter	$\operatorname{Flag}$	Result	Result	Result	$\operatorname{Units}$	$\operatorname{Dilution}$	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
HMX		36.6	36.6	< 2.46	$\mu \mathrm{g/L}$	20	2.46	0.5	0.123
RDX	U	< 5.96	<10.0	< 5.96	$\mu { m g/L}$	20	5.96	0.5	0.298
1,3,5-Trinitrobenzene	U	< 6.78	<10.0	< 6.78	$\mu { m g/L}$	20	6.78	0.5	0.339
1,3-Dinitrobenzene	U	< 7.78	<10.0	< 7.78	$\mu { m g/L}$	20	7.78	0.5	0.389
Nitrobenzene	U	< 7.58	<10.0	< 7.58	$\mu { m g/L}$	20	7.58	0.5	0.379
Tetryl	U	< 8.26	<10.0	< 8.26	$\mu { m g/L}$	20	8.26	0.5	0.413
$\operatorname{TNT}$	U	< 9.28	<10.0	< 9.28	$\mu { m g/L}$	20	9.28	0.5	0.464
4-Amino-DNT	U	< 6.38	<10.0	< 6.38	$\mu { m g/L}$	20	6.38	0.5	0.319
2-Amino-DNT	U	< 7.82	<10.0	< 7.82	$\mu { m g/L}$	20	7.82	0.5	0.391
2,6-DNT	U	< 6.46	<10.0	< 6.46	$\mu \mathrm{g/L}$	20	6.46	0.5	0.323
2,4-DNT	U	< 7.32	<10.0	< 7.32	$\mu { m g/L}$	20	7.32	0.5	0.366
2-NT	U	< 7.58	<10.0	< 7.58	$\mu { m g}/{ m L}$	20	7.58	0.5	0.379
4-NT	U	< 7.96	<10.0	< 7.96	$\mu \mathrm{g}/\mathrm{L}$	20	7.96	0.5	0.398
3-NT	U	< 6.92	<10.0	< 6.92	$\mu g/L$	20	6.92	0.5	0.346

					$\operatorname{Spike}$	$\operatorname{Percent}$	$\operatorname{Recovery}$
$\mathbf{Surrogate}$	Flag	Result	$\operatorname{Units}$	$\operatorname{Dilution}$	${f Amount}$	Recovery	Limits
1,2-Dinitrobenzene	1	5.54	$\mu { m g/L}$	20	2.50	222	19.8 - 160

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Fe, Total Analytical Method: Prep Method: S 3010A S 6010B QC Batch: 58610 Date Analyzed: 2009-04-15Analyzed By: RRPrep Batch: 49975Sample Preparation: 2009-04-14 Prepared By: KV

<sup>&</sup>lt;sup>1</sup> High surrogate recovery due to peak interference.

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		$\operatorname{SDL}$	MQL	Method					
		Based	Based	$\operatorname{Blank}$				MQL	MDL
Parameter	Flag	Result	Result	$\operatorname{Result}$	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Total Iron		0.108	0.108	< 0.000872	mg/L	1	0.000872	0.01	0.000872

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: El Paso

Analysis: Fluoride (IC) Analytical Method: E 300.0 Prep Method: N/AQC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JRPrep Batch: 50331 Sample Preparation: Prepared By: JR2009-04-16 SDLMQLMethod Based Based Blank MQLMDL Parameter Result Units Dilution SDLFlag Result Result (Unadjusted) (Unadjusted)

mg/L

0.217

5

0.17

0.0434

< 0.217

# Sample: 192905 - HLSF-0154-HCF-005-0409

< 0.217

< 0.850

Laboratory: Lubbock

Fluoride

Analysis: Hg, Total Analytical Method: S 7470A Prep Method: N/AQC Batch: 58752 TPDate Analyzed: 2009-04-20 Analyzed By: Prep Batch: 50149 Sample Preparation: 2009-04-20 Prepared By: TP

SDLMQL Method MQLMDL Based Based Blank Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Mercury < 0.0000329 < 0.000200 < 0.0000329 0.00003290.0002 3.29e-05mg/L

#### Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: K, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 58667 Date Analyzed: 2009-04-17 Analyzed By: RRPrep Batch: 49975 Sample Preparation: 2009-04-14 Prepared By: KV

SDLMQLMethod MQLMDL Based Based Blank Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Potassium 42.842.8< 0.172mg/L0.172 0.172

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Mg, Total Analytical Method: S 6010B Prep Method: S 3010A

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QC Batch: Prep Batch:	58667 49975			Analyzed: le Preparati		9-04-17 9-04-14		Analyzed E Prepared B	•	
			$\operatorname{SDL}$	MQL	Method					
			$\operatorname{Based}$	$\operatorname{Based}$	$\operatorname{Blank}$				MQL	MDL
Parameter		$\operatorname{Flag}$	Result	Result	Result	$\operatorname{Units}$	$\operatorname{Dilution}$	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Total Magne	$\operatorname{sium}$		292	292	< 1.60	mg/L	10	1.60	1	0.16

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Mn, Total Analytical Method: S 3010A Analysis: S 6010B Prep Method: QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RRPrep Batch: 49975 Sample Preparation: 2009-04-14 Prepared By: KV

SDLMQL Method Based Based Blank MQL MDL Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) 0.0670Total Manganese 0.0670< 0.000305 mg/L0.0003050.00250.0003051

#### Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Mo, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: Analyzed By: 58610 Date Analyzed: 2009-04-15 RRPrep Batch: Sample Preparation: Prepared By: 499752009-04-14 KV

SDLMQLMethod Based Based Blank MQLMDL Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Molybdenum 0.00600< 0.0100 < 0.00119 0.00119 0.01 0.00119 mg/L

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Na, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 58667 Date Analyzed: 2009-04-17 Analyzed By: RRPrep Batch: Sample Preparation: Prepared By: KV499752009-04-14

SDLMQLMethod Based Based Blank MQLMDLSDLParameter Flag Result Result Result Units Dilution (Unadjusted) (Unadjusted) Total Sodium 19501950< 0.500mg/L10 0.5000.05

Sample: 192905 - HLSF-0154-HCF-005-0409

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HELSTF Diesel Spill Groundwater

Laboratory: Lubbock Analysis: Ni, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: Date Analyzed: Analyzed By: 58610 2009-04-15 RRPrep Batch: 49975 Sample Preparation: 2009-04-14 Prepared By: KVSDLMQLMethod Based Based Blank MQL MDL Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Nickel 0.1270.127< 0.00121mg/L1 0.00121 0.0050.00121

Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Nitrate and Nitrite as N Analytical Method: SM 4500-NO3 E Prep Method: N/AQC Batch: Date Analyzed: Analyzed By: KV58776 2009-04-17 Prep Batch: 50167 Sample Preparation: 2009-04-17 Prepared By: KV

SDL MQL Method MQLMDLBased Based Blank Parameter Result Result Result Units Dilution SDLFlag (Unadjusted) (Unadjusted) Nitrate and Nitrite as N 0.1080.108< 0.0350 mg/L0.0350 0.10.035

Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analytical Method: Analysis: O/GE 1664 Prep Method: N/AQC Batch: 58921 Date Analyzed: 2009-04-24 Analyzed By: AHPrep Batch: 50291 Sample Preparation: Prepared By: AH

SDLMQLMethod Based Based Blank MQLMDL SDL Parameter Flag Result Result Result Units Dilution (Unadjusted) (Unadjusted) Oil and Grease  $\overline{745}$ 745 < 3.46 mg/L 3.46 5 3.459

Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: P. Total Analytical Method: S 3010A S 6010B Prep Method: QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RRPrep Batch: 49975Sample Preparation: 2009-04-14 Prepared By: KV

SDL  ${\rm Method}$ MQL Based Based Blank MQLMDLParameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Phosphorous 0.07100.0710< 0.00289 mg/L0.002890.0250.00289

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HELSTF Diesel Spill Groundwater

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Pb. Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RRPrep Batch: 49975 Sample Preparation: 2009-04-14 Prepared By: KV

 $\mathrm{SDL}$   $\mathrm{MQL}$   $\mathrm{Method}$ 

MQLBased Based Blank MDL Parameter Result Result Result Units Dilution SDL(Unadjusted) Flag (Unadjusted) Total Lead < 0.00326 < 0.00500 < 0.00326 mg/L 0.00326 0.0050.00326

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: El Paso

Analysis: рΗ Analytical Method: SM 4500-H+Prep Method: N/AQC Batch:  $_{
m JG}$ 58513 Date Analyzed: 2009-04-10 Analyzed By: Prep Batch: 49958 Sample Preparation: 2009-04-10 Prepared By: MD

RL

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Sb. Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RRPrep Batch: 49975 Sample Preparation: 2009-04-14 Prepared By: KV

SDL MQL Method

Based Based Blank MQLMDLFlag SDLParameter Result Result Result Units Dilution (Unadjusted) (Unadjusted) < 0.02000.02 Total Antimony < 0.00440< 0.00440mg/L0.004400.0044

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Se, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RRPrep Batch: 49975 Sample Preparation: KV2009-04-14 Prepared By:

SDL MQL Method

Based Blank MQLMDL Based Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Selenium < 0.00508 < 0.0200< 0.00508 mg/L0.00508 0.02 0.00508

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Semivolatiles Analytical Method: S 8270C Prep Method: S 3510C QC Batch: 58615 Date Analyzed: 2009-04-16 Analyzed By: MN Prep Batch: 50042 Sample Preparation: 2009-04-13 Prepared By: MN

		$\operatorname{SDL}$	MQL	Method					
		$\operatorname{Based}$	Based	Blank				MQL	MDL
Parameter	Flag	Result	Result	Result	${\rm Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Pyridine	U	< 0.0129	< 0.0505	< 0.0129	mg/L	10.101	0.0129	0.005	0.001281
N-Nitrosodimethylamine	U	< 0.0194	< 0.0505	< 0.0194	mg/L	10.101	0.0194	0.005	0.001918
2-Picoline	U	< 0.0133	< 0.0505	< 0.0133	mg/L	10.101	0.0133	0.005	0.001321
Methyl methanesulfonate	U	< 0.0176	< 0.0505	< 0.0176	mg/L	10.101	0.0176	0.005	0.001747
Ethyl methanesulfonate	U	< 0.0123	< 0.0505	< 0.0123	mg/L	10.101	0.0123	0.005	0.001218
Phenol	U	< 0.0166	< 0.0505	< 0.0166	mg/L	10.101	0.0166	0.005	0.001649
Aniline	U	< 0.0139	< 0.0505	< 0.0139	mg/L	10.101	0.0139	0.005	0.001378
${ m bis}(2{ ext{-chloroet}}{ m hyl}){ m et}{ m her}$	U	< 0.0219	< 0.0505	< 0.0219		10.101	0.0219	0.005	0.002172
2-Chlorophenol	U	< 0.0151	< 0.0505	< 0.0151		10.101	0.0151	0.005	0.001498
1,3-Dichlorobenzene (meta)	U	< 0.0168	< 0.0505	< 0.0168	mg/L	10.101	0.0168	0.005	0.001663
1,4-Dichlorobenzene (para)	U	< 0.0158	< 0.0505	< 0.0158		10.101	0.0158	0.005	0.001562
Benzyl alcohol	U	< 0.0102	< 0.0505	< 0.0102	mg/L	10.101	0.0102	0.005	0.001005
1,2-Dichlorobenzene (ortho)	U	< 0.0166	< 0.0505	< 0.0166	mg/L	10.101	0.0166	0.005	0.00164
2-Methylphenol	U	< 0.0160	< 0.0505	< 0.0160		10.101	0.0160	0.005	0.001581
${ m bis}(2{ m -chloroisopropyl}){ m ether}$	U	< 0.00836	< 0.0505	< 0.00836	mg/L	10.101	0.00836	0.005	0.000828
4-Methylphenol / 3-Methylphenol	U	< 0.0126	< 0.0505	< 0.0126	mg/L	10.101	0.0126	0.005	0.001245
N-Nitrosodi-n-propylamine	U	< 0.0128	< 0.0505	< 0.0128	mg/L	10.101	0.0128	0.005	0.00127
He xach loro  et  hane	U		< 0.0505	< 0.0200		10.101	0.0200	0.005	0.001981
$egin{array}{c} { m Acetophenone} \end{array}$		0.846	0.846	< 0.0128		10.101	0.0128	0.005	0.001273
Nitrobenzene	U	< 0.0195		< 0.0195			0.0195	0.005	0.001928
N-Nitrosopiperidine	U	< 0.0122	< 0.0505	< 0.0122		10.101	0.0122	0.005	0.001205
Isophorone	U	< 0.0196		< 0.0196		10.101	0.0196	0.005	0.001943
2-Nitrophenol	U	< 0.0141	< 0.0505	< 0.0141	mg/L	10.101	0.0141	0.005	0.0014
2,4-Dimethylphenol	U	< 0.0110		< 0.0110		10.101	0.0110	0.005	0.001092
${ m bis}(2{ m -chloroethoxy}){ m methane}$	U	< 0.0125	< 0.0505	< 0.0125	mg/L	10.101	0.0125	0.005	0.001242
2,4-Dichlorophenol	U	< 0.0135	< 0.0505	< 0.0135	mg/L	10.101	0.0135	0.005	0.001338
1,2,4-Trichlorobenzene	U	< 0.0195	< 0.0505	< 0.0195		10.101	0.0195	0.005	0.001934
Benzoic acid	U	< 0.0307	< 0.0505	< 0.0307		10.101	0.0307	0.005	0.003042
Naphthalene		0.916	0.916	< 0.0167		10.101	0.0167	0.005	0.00165
a,a-Dimethylphenethylamine	U	< 0.00766				10.101	0.00766	0.005	0.000758
4-Chloroaniline		0.0977	0.0977	< 0.0116	mg/L	10.101	0.0116	0.005	0.001152
2,6-Dichlorophenol	U	< 0.0121	< 0.101	< 0.0121		10.101	0.0121	0.01	0.001198
${\it Hexachlorobut}$ adiene	U	< 0.0186	< 0.0505	< 0.0186	mg/L	10.101	0.0186	0.005	0.001838
N-Nitroso-di-n-butylamine	U	< 0.0170	< 0.0505	< 0.0170	mg/L	10.101	0.0170	0.005	0.001687
4-Chloro-3-methylphenol	U	< 0.0121		< 0.0121	<u> </u>	10.101	0.0121	0.005	0.001199
$2\hbox{-}Methylnaphthalene$	2	$\bf 4.32$	$\boldsymbol{4.32}$	< 0.0146			0.0146	0.005	0.001451
$1\hbox{-} Methylnaphthalene$	3	3.67	3.67	< 0.0156	$\rm mg/L$	10.101	0.0156	0.005	0.00155
1,2,4,5-Tetrachlorobenzene	U	< 0.0207	< 0.0505	< 0.0207	mg/L	10.101	0.0207	0.005	0.00205

 $continued \dots$ 

<sup>&</sup>lt;sup>2</sup>Estimated concentration value greater than standard range.

<sup>&</sup>lt;sup>3</sup>Estimated concentration value greater than standard range.

 $sample\ 192905\ continued\ \dots$ 

		$\operatorname{SDL}$	MQL	Method					
		$\operatorname{Based}$	Based	Blank				MQL	MDL
Parameter	$\operatorname{Flag}$	Result	Result	Result	Units	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Hexachlorocyclopentadiene	U	< 0.0389	< 0.0505	< 0.0389	mg/L	10.101	0.0389	0.005	0.00385
2,4,6-Trichlorophenol	U	< 0.0154		< 0.0154		10.101	0.0154	0.01	0.001523
2,4,5-Trichlorophenol	U	< 0.0323	< 0.0505	< 0.0323	<u> </u>	10.101	0.0323	0.005	0.003202
2-Chloronaphthalene	U	< 0.0170	< 0.0505	< 0.0170	mg/L	10.101	0.0170	0.005	0.001683
$1 ext{-Chloronaphthalene}$	U	< 0.0183	< 0.0505	< 0.0183	mg/L	10.101	0.0183	0.005	0.001808
2-Nitroaniline	U	< 0.0171	< 0.0505	< 0.0171	mg/L	10.101	0.0171	0.005	0.00169
${\bf Dimethylphthalate}$	U	< 0.0180	< 0.0505	< 0.0180	mg/L	10.101	0.0180	0.005	0.001784
${ m Acenapht hylene}$	U	< 0.0137	< 0.0505	< 0.0137	mg/L	10.101	0.0137	0.005	0.001356
2,6-Dinitrotoluene	U	< 0.0141	< 0.0505	< 0.0141	mg/L	10.101	0.0141	0.005	0.001392
3-Nitroaniline	U	< 0.0125	< 0.0505	< 0.0125	mg/L	10.101	0.0125	0.005	0.001236
${ m Acenapht}$ hene	U	< 0.0133	< 0.0505	< 0.0133	mg/L	10.101	0.0133	0.005	0.00132
2,4-Dinitrophenol	U	< 0.0396	< 0.0505	< 0.0396	mg/L	10.101	0.0396	0.005	0.003916
Dibenzofuran		0.582	0.582	< 0.0163	mg/L	10.101	0.0163	0.005	0.001613
${ m Pentachlorobenzene}$	U	< 0.0245	< 0.0505	< 0.0245	mg/L	10.101	0.0245	0.005	0.002422
4-Nitrophenol	U	< 0.0128	< 0.252	< 0.0128	mg/L	10.101	0.0128	0.025	0.001272
2,4-Dinitrotoluene	U	< 0.0140	< 0.0505	< 0.0140	mg/L	10.101	0.0140	0.005	0.001388
1-Naphthylamine	U	< 0.0129	< 0.0505	< 0.0129	mg/L	10.101	0.0129	0.005	0.001281
2,3,4,6-Tetrachlorophenol	U	< 0.0131	< 0.101	< 0.0131	mg/L	10.101	0.0131	0.01	0.001297
$2 ext{-Naphthylamine}$	U	< 0.0156	< 0.0505	< 0.0156	mg/L	10.101	0.0156	0.005	0.00154
Fluorene		0.727	0.727	< 0.0131	mg/L	10.101	0.0131	0.005	0.001295
4-Chlorophenyl-phenylether	U	< 0.0175	< 0.0505	< 0.0175	mg/L	10.101	0.0175	0.005	0.001729
Diethylphthalate	U	< 0.0163	< 0.0505	< 0.0163	mg/L	10.101	0.0163	0.005	0.00161
4-Nitroaniline	U	< 0.0102	< 0.0505	< 0.0102	mg/L	10.101	0.0102	0.005	0.001009
Diphenylhydrazine	U	< 0.0126	< 0.0505	< 0.0126	mg/L	10.101	0.0126	0.005	0.00125
4,6-Dinitro- $2$ -methylphenol	U	< 0.0136	< 0.0505	< 0.0136	mg/L	10.101	0.0136	0.005	0.001346
Diphenylamine		0.501	0.501	< 0.0160	mg/L	10.101	0.0160	0.005	0.001589
4-Bromophenyl-phenylether	U	< 0.0189	< 0.0505	< 0.0189	mg/L	10.101	0.0189	0.005	0.001869
Phenacetin	U	< 0.0140	< 0.0505	< 0.0140	mg/L	10.101	0.0140	0.005	0.001391
${ m Hexachlorobenzene}$	U	< 0.0240	< 0.0505	< 0.0240	mg/L	10.101	0.0240	0.005	0.002375
4-Aminobiphenyl	U	< 0.0136	< 0.0505	< 0.0136	mg/L	10.101	0.0136	0.005	0.001345
Pentachlorophenol	U	< 0.00638	< 0.101			10.101	0.00638	0.01	0.000632
Anthracene	U	< 0.0154	< 0.0505	< 0.0154		10.101	0.0154	0.005	0.001522
Pentachloronitrobenzene	U	< 0.0310	< 0.0505	< 0.0310		10.101	0.0310	0.005	0.003074
Pronamide	U	< 0.0160		< 0.0160		10.101	0.0160	0.005	0.001589
Phenanthrene	4	1.62	1.62	< 0.0146		10.101	0.0146	0.005	0.001443
Di-n-butylphthalate	U		< 0.0505	< 0.0126		10.101	0.0126	0.005	0.001251
Fluoranthene	J	0.0347	< 0.0505	< 0.0160		10.101	0.0160	0.005	0.001588
Benzidine	U	< 0.00854	< 0.252	< 0.00854	mg/L	10.101	0.00854	0.025	0.000845
Pyrene		0.134	0.134	< 0.0136	mg/L	10.101	0.0136	0.005	0.00135
p-Dimethylaminoazobenzene	U	< 0.00979	< 0.0505	< 0.00979	mg/L	10.101	0.00979	0.005	0.000969
Butylbenzylphthalate	U		< 0.0505	< 0.0111		10.101	0.0111	0.005	0.001096
Benzo(a)anthracene	U		< 0.0505	< 0.0139		10.101	0.0139	0.005	0.001375
3,3-Dichlorobenzidine	U		< 0.0505	< 0.0131	<u> </u>	10.101	0.0131	0.005	0.0013
Chrysene	U		< 0.0505	< 0.0148			0.0148	0.005	0.001463

 $continued \dots$ 

<sup>&</sup>lt;sup>4</sup>Estimated concentration value greater than standard range.

sample 192905 continued ...

		SDL	MQL	Method					
		$\operatorname{Based}$	$\operatorname{Based}$	Blank				MQL	MDL
Parameter	Flag	Result	Result	Result	Units	${\bf Dilution}$	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
bis(2-ethylhexyl)phthalate	J	0.0455	< 0.0505	< 0.0109	mg/L	10.101	0.0109	0.005	0.001078
Di-n-octylphthalate	U	< 0.00901	< 0.0505	< 0.00901	mg/L	10.101	0.00901	0.005	0.000892
${ m Benzo}({ m b}) { m fluoranthene}$	U	< 0.0127	< 0.0505	< 0.0127	mg/L	10.101	0.0127	0.005	0.001261
$\mathrm{Benzo}(\mathtt{k})\mathrm{fluoranthene}$	U	< 0.0151	< 0.0505	< 0.0151	mg/L	10.101	0.0151	0.005	0.001492
7,12-Dimethylbenz (a) anthracene	U	< 0.0136	< 0.0505	< 0.0136	mg/L	10.101	0.0136	0.005	0.001344
$\mathrm{Benzo}(\mathrm{a})\mathrm{pyrene}$	U	< 0.0157	< 0.0505	< 0.0157	mg/L	10.101	0.0157	0.005	0.001552
3-Methylcholanthrene	U	< 0.0167	< 0.0505	< 0.0167	mg/L	10.101	0.0167	0.005	0.001656
${ m Dibenzo(a,j)}$ acridine	U	< 0.0203	< 0.0505	< 0.0203	mg/L	10.101	0.0203	0.005	0.002007
Indeno(1,2,3-cd)pyrene	U	< 0.0197	< 0.0505	< 0.0197	mg/L	10.101	0.0197	0.005	0.001948
${ m Dibenzo(a,h)}$ anthracene	U	< 0.0212	< 0.0505	< 0.0212	mg/L	10.101	0.0212	0.005	0.002096
$\mathrm{Benzo}(\mathrm{g,h,i})\mathrm{perylene}$	U	< 0.0209	< 0.0505	< 0.0209	mg/L	10.101	0.0209	0.005	0.002066

					Spike	Percent	Recovery
$\mathbf{Surrogate}$	$\operatorname{Flag}$	$\operatorname{Result}$	${ m Units}$	Dilution	${f Amount}$	Recovery	Limits
2-Fluorophenol		0.0271	$\mathrm{mg/L}$	10.101	0.0800	34	10 - 64.2
Phenol- $d5$	5	0.0408	${ m mg/L}$	10.101	0.0800	51	10 - 45.3
${ m Nitrobenzene-d5}$		0.0665	${ m mg/L}$	10.101	0.0800	83	23.4 - 95.9
2-Fluorobiphenyl	6	0.0850	${ m mg/L}$	10.101	0.0800	106	20 - 96.4
2,4,6-Tribromophenol		0.0574	${ m mg/L}$	10.101	0.0800	72	23.8 - 85.7
${ m Terphenyl-d14}$		0.0676	${ m mg/L}$	10.101	0.0800	84	45.8 - 115

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: El Paso

Analysis: SO4 (IC) Analytical Method: Prep Method: N/AE 300.0 QC Batch: 58966 Date Analyzed: 2009-04-16Analyzed By: JRPrep Batch: 50331 Sample Preparation: 2009-04-16 Prepared By: JR

SDLMQLMethod Based Based Blank MQLMDLParameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) 2160 2160 Sulfate < 25.250 25.2 1.33 0.5038mg/L

#### Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: TDS Analytical Method: SM 2540C Prep Method: N/AQC Batch: 58649Date Analyzed: Analyzed By: RD2009-04-16 Prep Batch: 50067 Sample Preparation: 2009-04-14 Prepared By: RD

<sup>&</sup>lt;sup>5</sup>8270 Only - One acidic surrogate is out of control limits. The other two acidic surrogates show extraction was performed properly.

<sup>&</sup>lt;sup>6</sup>8270 Only - One basic surrogate is out of control limits. The other two basic surrogates show extraction was performed properly.

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HELSTF Diesel Spill Groundwater

-									
		$\operatorname{SDL}$	MQL	Method					
		$\operatorname{Based}$	$\operatorname{Based}$	$\operatorname{Blank}$				MQL	MDL
Parameter	$\operatorname{Flag}$	Result	Result	Result	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Total Dissolved Solids		6255	6255	<25.00	mg/L	5	25.00	10	5

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: TKN Analytical Method: E 351.3Prep Method: N/AQC Batch: 58769 Date Analyzed: 2009-04-20 Analyzed By: AHPrep Batch: 50105 Sample Preparation: Prepared By: AH

SDL MQL Method

Based Based Blank MQLMDL Result SDLParameter Flag Result Result Units Dilution (Unadjusted) (Unadjusted) Total Kjeldahl Nitrogen - N 2.80 <10.0 < 2.45mg/L $\overline{2.45}$ 10 2.45 1

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Tl, Total Analytical Method: S 6010B Prep Method: S 3010A QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RRPrep Batch: 49975 Sample Preparation: Prepared By: KV2009-04-14

SDLMQL Method MQLBased Based Blank MDL Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) Total Thallium < 0.00488 < 0.05000.004880.05 0.00488 < 0.00488 mg/L1

#### Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: TOC Analytical Method: SM 5310C Prep Method: N/A QC Batch: 58713 Date Analyzed: 2009-04-20 Analyzed By: KVPrep Batch: 50124 Sample Preparation: 2009-04-20 Prepared By: KV

SDLMQL Method MQL MDL Based Based Blank Parameter Result Result Result Dilution SDL(Unadjusted) Flag Units (Unadjusted) Total Organic Carbon 37.237.2< 0.401mg/L0.401 0.401

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Total Cyanide Analytical Method: SM 4500-CN C,E Prep Method: N/A

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HELSTF Diesel Spill Groundwater

QC Batch: 58704 Date Analyzed: 2009-04-17 Analyzed By: AH Prep Batch: 50107 Sample Preparation: Prepared By: AH

SDLMQLMethod Based Based Blank MQLMDL  $\operatorname{SDL}$ Parameter Flag Result Result Result Units Dilution (Unadjusted) (Unadjusted) Total Cyanide < 0.0110 < 0.0150< 0.0110mg/L0.0110 0.015 0.011

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: TPH DRO Analytical Method: Mod. 8015B Prep Method: N/A

QC Batch: 58516 Date Analyzed: 2009-04-13 Analyzed By: Prep Batch: 49961 Sample Preparation: 2009-04-13 Prepared By:

SDLMQL Method Based Based Blank MQLMDL Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted)  $\overline{\mathrm{DRO}}$ 12001200< 0.876mg/L1 0.8765 0.876

Spike Percent Recovery Surrogate Flag Result Units Dilution Limits Amount Recovery n-Triacontane 12.2mg/L10.0 122 34.4 - 185

#### Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5030B QC Batch: 58597 Date Analyzed: 2009-04-15 Analyzed By: ERPrep Batch: Sample Preparation: Prepared By: 50027 2009-04-15 ER

SDLMQLMethod MDLBased Based Blank MQL Parameter Flag Result Result Result Units Dilution SDL(Unadjusted) (Unadjusted) GRO 1.421.42 < 0.760mg/L5 0.7600.20.152

Spike Percent Recovery Surrogate Flag Result Units Dilution Amount Recovery Limits Trifluorotoluene (TFT) 0.465mg/L0.50093 75.6 - 110 5 4-Bromofluorobenzene (4-BFB) 0.500100 63.6 - 117 0.500mg/L5

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

S 3010A Analysis: V, Total Analytical Method: S 6010B Prep Method: QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR2009-04-14Prep Batch: 49975 Sample Preparation: Prepared By: KV

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HELSTF Diesel Spill Groundwater

		$\operatorname{SDL}$	$_{ m MQL}$	Method					
		$\operatorname{Based}$	$\operatorname{Based}$	$\operatorname{Blank}$				MQL	MDL
Parameter	$\operatorname{Flag}$	Result	Result	$\operatorname{Result}$	$\operatorname{Units}$	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Total Vanadium		0.0250	0.0250	< 0.000426	mg/L	1	0.000426	0.005	0.000426

# Sample: 192905 - HLSF-0154-HCF-005-0409

Laboratory: Lubbock

Analysis: Zn, Total Analytical Method: S 6010B Prep Method: S 3010A 58610 QC Batch: Date Analyzed: 2009 - 04 - 15Analyzed By: RR49975Prep Batch: Sample Preparation: 2009-04-14 Prepared By: KV SDLMethod MQL

		Based	$\operatorname{Based}$	$\operatorname{Blank}$				MQL	MDL
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	Result	$\operatorname{Result}$	Units	Dilution	$\operatorname{SDL}$	(Unadjusted)	(Unadjusted)
Total Zinc		0.186	0.186	< 0.000465	${ m mg/L}$	1	0.000465	0.005	0.000465

# Method Blank (1)

QC Batch: 58516 Date Analyzed: 2009-04-13 Analyzed By: Prep Batch: 49961 QC Preparation: 2009-04-13 Prepared By:

Parameter		Flag	]	Result	Units		$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
DRO			<	(0.876	${ m mg/L}$	1	0.876
Surrogate	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	Dilution	$rac{ ext{Spike}}{ ext{Amount}}$	Percent Recovery	$rac{ m Recovery}{ m Limits}$
n-Triacontane		11.3	$\mathrm{mg/L}$	1	10.0	113	34.4 - 185

# Method Blank (1)

QC Batch: 58597 Date Analyzed: 2009-04-15 Analyzed By: ER
Prep Batch: 50027 QC Preparation: 2009-04-15 Prepared By: ER

				$\operatorname{Reporting}$
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	${ m Units}$	Limits
GRO		< 0.152	${ m mg/L}$	0.152

					$\operatorname{Spike}$	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	Dilution	${ m Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0916	$\mathrm{mg/L}$	1	0.100	92	75.6 - 110
4-Bromofluorobenzene (4-BFB)		0.0958	${ m mg/L}$	1	0.100	96	63.6 - 117

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Tepore Base. May 0, 2008		HELSTF Diesel Spill Groundwater		1 age (valide). 20 of 10
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Silver		<0.00111	mg/L	0.00111
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	$\operatorname{Flag}$	Result	$\operatorname{Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Aluminum		< 0.00301	m mg/L	0.00301
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
D	וח	D 14	TI '	Reporting
Parameter Total Arsenic	Flag	Result <0.00448	Units mg/L	Limits 0.00448
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	Flag	$\operatorname{Result}$	Units	$\begin{array}{c} {\rm Reporting} \\ {\rm Limits} \end{array}$
Total Barium		< 0.00105	m mg/L	0.00105
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	$\operatorname{Flag}$	Result	${ m Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Beryllium		< 0.000450	m mg/L	0.00045

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		HELSTF Diesel Spill Groundwater		0
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	Flag	Result	$\operatorname{Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Cadmium	1 100	< 0.000303	mg/L	0.000303
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	$\operatorname{Flag}$	Result	Units	$\begin{array}{c} {\rm Reporting} \\ {\rm Limits} \end{array}$
Total Cobalt		< 0.000822	mg/L	0.000822
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Chromium		< 0.000583	m mg/L	0.000583
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	$\operatorname{Flag}$	Result	${ m Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Copper		< 0.000843	$\mathrm{mg/L}$	0.000843
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	Flag	$\operatorname{Result}$	${ m Units}$	$\begin{array}{c} \text{Reporting} \\ \text{Limits} \end{array}$
Total Iron		< 0.000872	${ m mg/L}$	0.000872

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		HELSTF Diesel Spill Groundwater		0
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	Flag	$\operatorname{Result}$	$\operatorname{Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Manganese	1105	<0.000305	mg/L	0.000305
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	${ m Units}$	$rac{ m Reporting}{ m Limits}$
Total Molybdenum		< 0.00119	m mg/L	0.00119
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	Flag	$\operatorname{Result}$	$\operatorname{Units}$	$rac{ m Reporting}{ m Limits}$
Total Nickel		< 0.00121	m mg/L	0.00121
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	Flag	$\operatorname{Result}$	$\operatorname{Units}$	$\begin{array}{c} {\rm Reporting} \\ {\rm Limits} \end{array}$
Total Phosphorous		< 0.00289	m mg/L	0.00289
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	Flag	Result	$\operatorname{Units}$	$\begin{array}{c} \text{Reporting} \\ \text{Limits} \end{array}$
Total Lead	<del>-</del>	< 0.00326	m mg/L	0.00326

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		HELSTF Diesel Spill Groundwater		0
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	Flag	Result	$\operatorname{Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Antimony	1100	<0.00440	m mg/L	0.0044
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	$\operatorname{Flag}$	Result	${ m Units}$	$\begin{array}{c} \text{Reporting} \\ \text{Limits} \end{array}$
Total Selenium		< 0.00508	m mg/L	0.00508
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	Flag	$\operatorname{Result}$	$\operatorname{Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Thallium		< 0.00488	m mg/L	0.00488
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	Flag	Result	$\operatorname{Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Total Vanadium		< 0.000426	m mg/L	0.000426
Method Blank (1)				
QC Batch: 58610 Prep Batch: 49975		Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	$\begin{array}{c} \text{Reporting} \\ \text{Limits} \end{array}$
Total Zinc		< 0.000465	${ m mg/L}$	0.000465

# Method Blank (1)

QC Batch: 58615 Date Analyzed: 2009-04-16 Analyzed By: MN Prep Batch: 50042 QC Preparation: 2009-04-13 Prepared By: MN

				Reporting
Parameter	Flag	$\operatorname{Result}$	$\operatorname{Units}$	Limits
Pyridine		< 0.00128	m mg/L	0.001281
N-Nitrosodimethylamine		< 0.00192	m mg/L	0.001918
2-Picoline		< 0.00132	$\mathrm{mg/L}$	0.001321
Methyl methanesulfonate		< 0.00175	m mg/L	0.001747
Ethyl methanesulfonate		< 0.00122	$\mathrm{mg/L}$	0.001218
Phenol		< 0.00165	$\mathrm{mg/L}$	0.001649
Aniline		< 0.00138	m mg/L	0.001378
bis(2-chloroethyl)ether		< 0.00217	$_{ m mg/L}$	0.002172
2-Chlorophenol		< 0.00150	$_{ m mg/L}$	0.001498
1,3-Dichlorobenzene (meta)		< 0.00166	$_{ m mg/L}$	0.001663
1,4-Dichlorobenzene (para)		< 0.00156	$_{ m mg/L}$	0.001562
Benzyl alcohol		< 0.00100	m mg/L	0.001005
1,2-Dichlorobenzene (ortho)		< 0.00164	$_{ m mg/L}$	0.00164
2-Methylphenol		< 0.00158	$_{ m mg/L}$	0.001581
bis(2-chloroisopropyl)ether		< 0.000828	$_{ m mg/L}$	0.000828
4-Methylphenol / 3-Methylphenol		< 0.00124	$_{ m mg/L}$	0.001245
N-Nitrosodi-n-propylamine		< 0.00127	$_{ m mg/L}$	0.00127
Hexachloroethane		< 0.00198	$_{ m mg/L}$	0.001981
Acetophenone		< 0.00127	$_{ m mg/L}$	0.001273
Nitrobenzene		< 0.00193	$^{}$ $^{-}$ $^{-}$	0.001928
N-Nitrosopiperidine		< 0.00120	$_{ m mg/L}$	0.001205
Isophorone		< 0.00194	$_{ m mg/L}$	0.001943
2-Nitrophenol		< 0.00140	$_{ m mg/L}$	0.0014
2,4-Dimethylphenol		< 0.00109	$_{ m mg/L}$	0.001092
bis(2-chloroethoxy) methane		< 0.00124	$_{ m mg/L}$	0.001242
2,4-Dichlorophenol		< 0.00134	$_{ m mg/L}$	0.001338
1,2,4-Trichlorobenzene		< 0.00191	$\frac{mg}{L}$	0.001934
Benzoic acid		< 0.00304	$^{}$ $^{-}$ $^{-}$	0.003042
Naphthalene		< 0.00165	$_{ m mg/L}$	0.00165
a,a-Dimethylphenethylamine		< 0.000758	$_{ m mg/L}$	0.000758
4-Chloroaniline		< 0.00115	$_{ m mg/L}$	0.001152
2,6-Dichlorophenol		< 0.00120	$_{ m mg/L}$	0.001198
Hexachlorobutadiene		< 0.00126	$\frac{mg}{L}$	0.001838
N-Nitroso-di-n-butylamine		< 0.00169	$\frac{mg}{L}$	0.001687
4-Chloro-3-methylphenol		< 0.00120	m mg/L	0.001199
2-Methylnaphthalene		< 0.00145	m mg/L	0.001451
1-Methylnaphthalene		< 0.00155	$\frac{mg}{L}$	0.00155
1,2,4,5-Tetrachlorobenzene		< 0.00205	m mg/L	0.00205
Hexachlorocyclopentadiene		< 0.00385	m mg/L	0.00385
2,4,6-Trichlorophenol		< 0.00152	m mg/L	0.001523
2,4,5-Trichlorophenol		< 0.00132	$_{ m mg/L}$	0.001323 $0.003202$
2-Chloronaphthalene		< 0.00168	$_{ m mg/L}$	0.003202 $0.001683$
1-Chloronaphthalene		< 0.00181	$_{ m mg/L}$	0.001808
2-Nitroaniline		< 0.00161	$_{ m mg/L}$	0.00160
2-11101UaIIIIIIIC		<u> </u>	mg/ L	0.00109

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# HELSTF Diesel Spill Groundwate

$method\ blank\ continued\ \dots$				
Parameter	$\operatorname{Flag}$	Result	$\operatorname{Units}$	$\begin{array}{c} { m Reporting} \\ { m Limits} \end{array}$
Dimethylphthalate	Flag	<0.00178	$\frac{\rm cmcs}{\rm mg/L}$	0.001784
Acenaphthylene		< 0.00178	m mg/L	0.001754 $0.001356$
2,6-Dinitrotoluene		< 0.00130	m mg/L	0.001390 $0.001392$
3-Nitroaniline		< 0.00139	m mg/L	0.001392 $0.001236$
Acenaphthene		< 0.00124	$_{ m mg/L}$	0.001230 $0.00132$
2,4-Dinitrophenol		< 0.00132	$_{ m mg/L}$	0.00132 $0.003916$
Dibenzofuran		< 0.00332	$_{ m mg/L}$	0.003910 $0.001613$
Pentachlorobenzene		< 0.00101	$_{ m mg/L}$	0.001013
4-Nitrophenol		< 0.00127	$_{ m mg/L}$	0.002422 $0.001272$
2,4-Dinitrotoluene		< 0.00127	$_{ m mg/L}$	0.001272
1-Naphthylamine		< 0.00133	$_{ m mg/L}$	0.001383
2,3,4,6-Tetrachlorophenol		< 0.00128	m mg/L	0.001281 $0.001297$
2-Naphthylamine		< 0.00150	$_{ m mg/L}$	0.001297 $0.00154$
Fluorene		< 0.00134	$_{ m mg/L}$	0.00134 $0.001295$
4-Chlorophenyl-phenylether		< 0.00130	$_{ m mg/L}$	0.001293 $0.001729$
Diethylphthalate		< 0.00173		0.001729 $0.00161$
4-Nitroaniline		< 0.00101	$\frac{\text{mg/L}}{\text{mg/L}}$	0.00101
4-Nitroannine Diphenylhydrazine		< 0.00101	$\frac{\text{mg/L}}{\text{mg/L}}$	0.001009 $0.00125$
- v v			$\frac{\text{mg/L}}{\text{mg/L}}$	0.00125 $0.001346$
4,6-Dinitro-2-methylphenol		< 0.00135	$_{ m mg/L}$	
Diphenylamine		< 0.00159	$_{ m mg/L}$	0.001589
4-Bromophenyl-phenylether		< 0.00187	$_{ m mg/L}$	0.001869
Phenacetin		< 0.00139	$_{ m mg/L}$	0.001391
Hexachlorobenzene		< 0.00238	$_{ m mg/L}$	0.002375
4-Aminobiphenyl		< 0.00134	$_{ m mg/L}$	0.001345
Pentachlorophenol		< 0.000632	$_{ m mg/L}$	0.000632
Anthracene Pentachloronitrobenzene		< 0.00152	$_{ m mg/L}$	0.001522
		< 0.00307	$_{ m mg/L}$	0.003074
Pronamide		< 0.00159	$_{ m mg/L}$	0.001589
Phenanthrene		< 0.00144	$_{ m mg/L}$	0.001443
Di-n-butylphthalate Fluoranthene		< 0.00125	$_{ m mg/L}$	0.001251
Benzidine		< 0.00159 $< 0.000845$	$_{ m mg/L}$	0.001588
			$\frac{\mathrm{mg}}{\mathrm{L}}$	$0.000845 \\ 0.00135$
Pyrene		< 0.00135	$_{ m mg/L}$	0.00135 $0.000969$
p-Dimethylaminoazobenzene		< 0.000969	$\frac{\mathrm{mg}}{\mathrm{L}}$	
Butylbenzylphthalate		< 0.00110	$_{ m mg/L}$	0.001096
Benzo(a)anthracene		< 0.00138	$_{ m mg/L}$	0.001375
3,3-Dichlorobenzidine		< 0.00130	$_{ m mg/L}$	0.0013
Chrysene		< 0.00146	$_{ m mg/L}$	0.001463
bis(2-ethylhexyl)phthalate		<0.00108	$_{ m mg/L}$	0.001078
Di-n-octylphthalate		< 0.000892	$_{ m mg/L}$	0.000892
Benzo(b)fluoranthene		< 0.00126	$_{ m mg/L}$	0.001261
Benzo(k)fluoranthene		< 0.00149	$_{ m mg/L}$	0.001492
7,12-Dimethylbenz(a)anthracene		< 0.00134	$_{ m mg/L}$	0.001344
Benzo(a)pyrene		< 0.00155	$_{ m mg/L}$	0.001552
3-Methylcholanthrene		< 0.00166	m mg/L	0.001656
Dibenzo(a,j)acridine		< 0.00201	m mg/L	0.002007
$\underline{\text{Indeno}(1,2,3\text{-cd})\text{pyrene}}$		< 0.00195	mg/L	0.001948

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Parameter	Flag	Result	$\operatorname{Units}$	$\begin{array}{c} { m Reporting} \\ { m Limits} \end{array}$
1 arameter	riag	1 Court	CIIIGS	Lillius
$\overline{ m Dibenzo(a,h)}$ anthracene		< 0.00210	m mg/L	0.002096
$\mathrm{Benzo}(\mathrm{g,h,i})$ perylene		< 0.00207	m mg/L	0.002066

					$\operatorname{Spike}$	$\operatorname{Percent}$	Recovery
$\mathbf{Surrogate}$	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	Dilution	${f Amount}$	Recovery	Limits
2-Fluorophenol		0.0209	$\mathrm{mg/L}$	1	0.0800	26	10 - 64.2
${ m Phenol-d5}$		0.0176	${ m mg/L}$	1	0.0800	22	10 - 45.3
${ m Nitrobenzene-d5}$		0.0473	${ m mg/L}$	1	0.0800	59	23.4 - 95.9
2-Fluorobiphenyl		0.0597	${ m mg/L}$	1	0.0800	75	20 - 96.4
2,4,6-Tribromophenol		0.0572	${ m mg/L}$	1	0.0800	72	23.8 - 85.7
${ m Terphenyl-d14}$		0.0776	${ m mg/L}$	1	0.0800	97	45.8 - 115

# Method Blank (1)

QC Batch:	58649	Date Analyzed:	2009-04-16	Analyzed By:	RD
Prep Batch:	50067	QC Preparation:	2009-04-14	Prepared By:	RD

				Reporting
Parameter	$\operatorname{Flag}$	Result	$\operatorname{Units}$	Limits
Total Dissolved Solids		< 5.000	$_{ m mg/L}$	5

# Method Blank (1)

QC Batch:	58656	Date Analyzed:	2009-04-17	Analyzed By:	RR
Prep Batch:	50044	QC Preparation:	2009-04-16	Prepared By:	KV

				$\operatorname{Reporting}$
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	Limits
Dissolved Chromium		< 0.000583	m mg/L	0.000583

# Method Blank (1)

QC Batch: 58667Date Analyzed: 2009-04-17 Analyzed By: RR Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

				Reporting
Parameter	$\operatorname{Flag}$	Result	$\operatorname{Units}$	Limits
Total Calcium		< 0.117	$\mathrm{mg/L}$	0.117

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Method Blank (1)				
QC Batch: 58667 Prep Batch: 49975		Date Analyzed: 2009-04-17 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
				Reporting
Parameter Total Potassium	Flag	Result <0.172	$\frac{\rm Units}{\rm mg/L}$	Limits 0.172
Total Totassium		V0.112	mg/ L	0.172
Method Blank (1)				
QC Batch: 58667		Date Analyzed: 2009-04-17		Analyzed By: RR
Prep Batch: 49975		QC Preparation: 2009-04-14		Prepared By: KV
				Reporting
Parameter	Flag	$\operatorname{Result}$	Units	Limits
Total Magnesium		< 0.160	m mg/L	0.16
M-41 - J Dll- (1)				
Method Blank (1)				
QC Batch: 58667 Prep Batch: 49975		Date Analyzed: 2009-04-17 QC Preparation: 2009-04-14		Analyzed By: RR Prepared By: KV
ттер васси. 49970		Contraction. 2003-04-14		r repared by. Kv
D	T21	Dl4	TT:4-	Reporting
Parameter Total Sodium	Flag	Result < 0.0500	$\frac{\mathrm{Units}}{\mathrm{mg/L}}$	$\frac{\text{Limits}}{0.05}$
			- Oi	
Method Blank (1)				
QC Batch: 58672		Date Analyzed: 2009-04-10		Analyzed By: MD
Prep Batch: 50088		QC Preparation: 2009-04-10		Prepared By: MD
-				Reporting
Parameter Hexavalent Chromium	Fla	eag Result <0.0119	Units	Limits
nexavalent Chromium		<0.0119	m mg/L	0.00594
Method Blank (1)				
QC Batch: 58694		Date Analyzed: 2009-04-16		Analyzed By: AH
Prep Batch: 50102		QC Preparation: 2009-04-16		Prepared By: AH
D	T)	D .		Reporting
Parameter Ammania N	Flag	Result	Units	Limits

< 0.353

Ammonia-N

mg/L

0.353

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Method Bl	ank (1)
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QC Batch: 58704 Date Analyzed: 2009-04-17 Analyzed By: AH Prep Batch: 50107 QC Preparation: 2009-04-17 Prepared By: AH

				Reporting
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	Limits
Total Cyanide		< 0.0110	mg/L	0.011

# Method Blank (1)

QC Batch: 58713 Date Analyzed: 2009-04-20 Analyzed By: KV Prep Batch: 50124 QC Preparation: 2009-04-20 Prepared By: KV

				Reporting
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	Limits
Total Organic Carbon		0.819	$_{ m mg/L}$	0.401

# Method Blank (1)

QC Batch: 58752 Date Analyzed: 2009-04-20 Analyzed By: TP Prep Batch: 50149 QC Preparation: 2009-04-20 Prepared By: TP

				$\operatorname{Reporting}$
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	Limits
Total Mercury		< 0.0000329	m mg/L	3.29e-05

# Method Blank (1)

QC Batch: 58762 Date Analyzed: 2009-04-14 Analyzed By: JG Prep Batch: 50159 QC Preparation: 2009-04-14 Prepared By: JG

Parameter	$\operatorname{Flag}$	Result	$\operatorname{Units}$	$egin{array}{c}  ext{Reporting} \  ext{Limits} \end{array}$
Hydroxide Alkalinity	<u> </u>	<1.00	mg/L as CaCo3	1
Carbonate Alkalinity		< 1.00	mg/L as CaCo3	1
Bicarbonate Alkalinity		< 4.00	mg/L as $CaCo3$	4
Total Alkalinity		< 4.00	mg/L as $CaCo3$	4

# Method Blank (1)

QC Batch: 58769 Date Analyzed: 2009-04-20 Analyzed By: AH Prep Batch: 50105 QC Preparation: 2009-04-17 Prepared By: AH

Report Date: May 6, 2009

QC Batch:

Prep Batch: 50331

58966

# ${\it Work~Order:~9041322} \\ {\it HELSTF~Diesel~Spill~Groundwater}$

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Analyzed By: JR

Prepared By: JR

D		T))	D. h	TT 14	Reporting
Parameter		Flag	Result	Units	Limits
Total Kjeldahl Nitrogen - N			<2.45	mg/L	2.45
Method Blank (1)					
QC Batch: 58776 Prep Batch: 50167		Date Analyzed: QC Preparation:	2009-04-17 2009-04-17		Analyzed By: KV Prepared By: KV
Parameter	I	$\operatorname{Flag}$	Result	${ m Units}$	Reporting Limits
Nitrate and Nitrite as N			< 0.0305	m mg/L	0.035
Method Blank (1)  QC Batch: 58921  Prep Batch: 50291		Date Analyzed: QC Preparation:	2009-04-24 2009-04-23		Analyzed By: AH Prepared By: AH
Parameter	Flag	Res		$\operatorname{Units}$	$rac{ ext{Reportin}_{\{}}{ ext{Limits}}$
Oil and Grease		<3.	46	$\mathrm{mg/L}$	3.459
Method Blank (1)  QC Batch: 58966		Date Analyzed:	2009-04-16		Analyzed By: JR
Prep Batch: 50331		QC Preparation:	2009-04-16		Prepared By: JR
Parameter	Flag	Result		${ m Units}$	Reporting Limits
Bromide		< 0.500	)	m mg/L	0.0394
Method Blank (1)					
QC Batch: 58966 Prep Batch: 50331		Date Analyzed: QC Preparation:	2009-04-16 2009-04-16		Analyzed By: JR Prepared By: JR
	Flag	Result		${ m Units}$	$rac{ m Reportins}{ m Limits}$
Parameter Chloride	riag	< 2.50		m mg/L	0.6404

Date Analyzed:

QC Preparation: 2009-04-16

2009-04-16

Work Order: 9041322 HE

Work Order: 9041322	Page Number: 30 of 76
ELSTF Diesel Spill Groundwater	

				Reporting
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	Limits
Fluoride		< 0.500	mg/L	0.0434

# Method Blank (1)

Analyzed By: JR QC Batch: Date Analyzed: 58966 2009-04-16 Prep Batch: 50331 QC Preparation: 2009-04-16 Prepared By: JR

				Reporting
Parameter	$\operatorname{Flag}$	${f Result}$	$\operatorname{Units}$	Limits
Sulfate		< 2.50	mg/L	0.5038

# Method Blank (1)

QC Batch: 59150 Date Analyzed: Analyzed By: DS 2009-04-27 Prep Batch: 50476 QC Preparation: 2009-04-14 Prepared By: DS

				$\operatorname{Reporting}$
Parameter	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	Limits
HMX		< 0.123	$\mu \mathrm{g}/\mathrm{L}$	0.123
RDX		< 0.298	$\mu { m g}/{ m L}$	0.298
1,3,5-Trinitrobenzene		< 0.339	$\mu { m g}/{ m L}$	0.339
1,3-Dinitrobenzene		< 0.389	$\mu { m g}/{ m L}$	0.389
${ m Nitrobenzene}$		< 0.379	$\mu { m g}/{ m L}$	0.379
Tetryl		< 0.413	$\mu { m g}/{ m L}$	0.413
$\operatorname{TNT}$		< 0.464	$\mu { m g}/{ m L}$	0.464
4-Amino-DNT		< 0.319	$\mu { m g}/{ m L}$	0.319
2-Amino-DNT		< 0.391	$\mu { m g}/{ m L}$	0.391
2,6-DNT		< 0.323	$\mu { m g}/{ m L}$	0.323
2,4-DNT		< 0.366	$\mu { m g}/{ m L}$	0.366
2-NT		< 0.379	$\mu { m g}/{ m L}$	0.379
4-NT		< 0.398	$\mu { m g}/{ m L}$	0.398
3-NT		< 0.346	$\mu \mathrm{g}/\mathrm{L}$	0.346

					$\operatorname{Spike}$	$\operatorname{Percent}$	Recovery
$\mathbf{Surrogate}$	$\operatorname{Flag}$	Result	$\operatorname{Units}$	Dilution	${ m Amount}$	Recovery	Limits
1,2-Dinitrobenzene		2.40	$\mu \mathrm{g/L}$	1	2.50	96	19.8 - 160

#### Duplicate (1) Duplicated Sample: 192901

QC Batch: 2009-04-10 58513Date Analyzed: Analyzed By: JG Prep Batch: 49958 QC Preparation: 2009-04-10 Prepared By:  $_{
m JG}$  Work Order: 9041322 HELSTF Diesel Spill Groundwater Page Number: 31 of 76

-						
	Duplicate	$\mathbf{Sample}$				RPD
Param	$\operatorname{Result}$	Result	$\operatorname{Units}$	Dilution	RPD	$\operatorname{Limit}$
Ha	7.29	7.27	S.11.	1	0	1.1

**Duplicate (1)** Duplicated Sample: 192972

QC Batch: 58649 Date Analyzed: 2009-04-16 Analyzed By: RD Prep Batch: 50067 QC Preparation: 2009-04-14 Prepared By: RD

	Duplicate	$\mathbf{Sample}$				RPD
Param	$\operatorname{Result}$	Result	$\operatorname{Units}$	$\operatorname{Dilution}$	RPD	$\operatorname{Limit}$
Total Dissolved Solids	2536	2386	$_{ m mg/L}$	2	6	10

**Duplicate (1)** Duplicated Sample: 193136

QC Batch: 58762 Date Analyzed: 2009-04-14 Analyzed By: JG Prep Batch: 50159 QC Preparation: 2009-04-14 Prepared By: JG

	Duplicate	$_{\rm Sample}$				RPD
Param	$\operatorname{Result}$	Result	$\operatorname{Units}$	$\operatorname{Dilution}$	RPD	$\operatorname{Limit}$
Hydroxide Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	20
Carbonate Alkalinity	< 1.00	< 1.00	mg/L as CaCo3	1	0	20
Bicarbonate Alkalinity	2480	2480	mg/L as CaCo3	1	0	20
Total Alkalinity	2480	2480	mg/L as CaCo3	1	0	20

# Laboratory Control Spike (LCS-1)

QC Batch: 58516 Date Analyzed: 2009-04-13 Analyzed By: Prep Batch: 49961 QC Preparation: 2009-04-13 Prepared By:

	$_{ m LCS}$			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	Units	$\mathrm{Dil}.$	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
DRO	35.1	$\mathrm{mg/L}$	1	25.0	< 0.876	140	74.3 - 158

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	$_{ m LCSD}$			$\operatorname{Spike}$	Matrix		${ m Rec}.$		$\operatorname{RPD}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
DRO	33.4	$\mathrm{mg/L}$	1	25.0	< 0.876	134	74.3 - 158	5	20

	LCS	LCSD			$\operatorname{Spike}$	LCS	LCSD	$\mathrm{Rec}$ .
Surrogate	$\operatorname{Result}$	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\mathrm{Rec.}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
n-Triacontane	12.2	11.8	m mg/L	1	10.0	122	118	34.4 - 149

# Laboratory Control Spike (LCS-1)

QC Batch: 58597 Date Analyzed: 2009-04-15 Analyzed By: ER
Prep Batch: 50027 QC Preparation: 2009-04-15 Prepared By: ER

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	$\mathrm{Dil}.$	${f Amount}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
GRO	0.911	$_{ m mg/L}$	1	1.00	< 0.152	91	78.6 - 123

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
GRO	0.909	$_{ m mg/L}$	1	1.00	< 0.152	91	78.6 - 123	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			$\operatorname{Spike}$	LCS	LCSD	$\mathrm{Rec.}$
Surrogate	$\operatorname{Result}$	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Rec.	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Trifluorotoluene (TFT)	0.0934	0.0983	$\mathrm{mg/L}$	1	0.100	93	98	79.3 - 124
4-Bromofluorobenzene (4-BFB)	0.0954	0.100	mg/L	1	0.100	95	100	80.9 - 120

# Laboratory Control Spike (LCS-1)

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
Total Silver	0.119	m mg/L	1	0.125	< 0.00111	95	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Silver	0.119	mg/L	1	0.125	< 0.00111	95	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Aluminum	0.928	$\mathrm{mg/L}$	1	1.00	< 0.00301	93	85 - 115

Work Order: 9041322 HELSTF Diesel Spill Groundwater

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Aluminum	0.934	$\mathrm{mg/L}$	1	1.00	< 0.00301	93	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 58610 Prep Batch: 49975 Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14 Analyzed By: RR Prepared By: KV

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	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	$\operatorname{Dil}$ .	${f Amount}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
Total Arsenic	0.479	$\mathrm{mg/L}$	1	0.500	< 0.00448	96	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	Limit	RPD	$\operatorname{Limit}$
Total Arsenic	0.474	$\mathrm{mg/L}$	1	0.500	< 0.00448	95	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 58610 Prep Batch: 49975 Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14 Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Barium	1.03	$\mathrm{mg/L}$	1	1.00	< 0.00105	103	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	Limit	RPD	$\operatorname{Limit}$
Total Barium	1.03	mg/L	1	1.00	< 0.00105	103	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

 QC Batch:
 58610
 Date Analyzed:
 2009-04-15

 Prep Batch:
 49975
 QC Preparation:
 2009-04-14

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Beryllium	0.0230	m mg/L	1	0.0250	< 0.000450	92	85 - 115

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	LCSD			$_{ m Spike}$	Matrix		Rec.		RPD
Param	Result	$\operatorname{Units}$	Dil.	A mount	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Beryllium	0.0230	mg/L	1	0.0250	< 0.000450	92	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Cadmium	0.246	mg/L	1	0.250	< 0.000303	98	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Cadmium	0.246	mg/L	1	0.250	< 0.000303	98	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		Rec.
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	$\mathrm{Rec}.$	$\operatorname{Limit}$
Total Cobalt	0.243	mg/L	1	0.250	< 0.000822	97	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		Rec.		RPD
Param	Result	$\operatorname{Units}$	Dil.	Amount	Result	Rec.	$\operatorname{Limit}$	RPD	Limit
Total Cobalt	0.243	mg/L	1	0.250	< 0.000822	97	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$
Total Chromium	0.0940	$\mathrm{mg/L}$	1	0.100	< 0.000583	94	85 - 115

Work Order: 9041322 HELSTF Diesel Spill Groundwater

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	$\operatorname{Units}$	Dil.	Amount	$\operatorname{Result}$	$\operatorname{Rec}$ .	Limit	RPD	$\operatorname{Limit}$
Total Chromium	0.0940	mg/L	1	0.100	< 0.000583	94	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 58610 Prep Batch: 49975

Date Analyzed: 2009 - 04 - 15QC Preparation: 2009-04-14

Analyzed By: RR Prepared By: KV

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	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Copper	0.121	$\mathrm{mg/L}$	1	0.125	< 0.000843	97	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	Amount	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Copper	0.121	mg/L	1	0.125	< 0.000843	97	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 58610 Prep Batch: 49975

Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Iron	0.493	$\mathrm{mg/L}$	1	0.500	< 0.000872	99	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	A mount	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Iron	0.491	mg/L	1	0.500	< 0.000872	98	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 58610 Prep Batch: 49975 Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$
Total Manganese	0.242	$\mathrm{mg/L}$	1	0.250	< 0.000305	97	85 - 115

Work Order: 9041322 HELSTF Diesel Spill Groundwater

	LCSD			G :1	3.5		T.		DDD
	LCSD			${ m Spike}$	Matrix		$\mathrm{Rec}$ .		$_{ m RPD}$
Param	Result	$\operatorname{Units}$	Dil.	Amount	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Manganese	0.242	mg/L	1	0.250	< 0.000305	97	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 58610 Prep Batch: 49975 Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14 Analyzed By: RR Prepared By: KV

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	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Molybdenum	0.510	$\mathrm{mg/L}$	1	0.500	< 0.00119	102	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Molybdenum	0.506	mg/L	1	0.500	< 0.00119	101	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

QC Batch: 58610 Prep Batch: 49975 Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14 Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Nickel	0.239	$\mathrm{mg/L}$	1	0.250	< 0.00121	96	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Nickel	0.239	mg/L	1	0.250	< 0.00121	96	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# Laboratory Control Spike (LCS-1)

 QC Batch:
 58610
 Date Analyzed:
 2009-04-15

 Prep Batch:
 49975
 QC Preparation:
 2009-04-14

Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$
Total Phosphorous	0.457	${ m mg/L}$	1	0.500	< 0.00289	91	85 - 115

	$_{ m LCSD}$			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	A mount	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Phosphorous	0.451	mg/L	1	0.500	< 0.00289	90	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 58610 Prep Batch: 49975 Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14 Analyzed By: RR Prepared By: KV

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	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	$\operatorname{Dil}$ .	${ m Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Lead	0.519	$\mathrm{mg/L}$	1	0.500	< 0.00326	104	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	$_{ m LCSD}$			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	Limit	RPD	$\operatorname{Limit}$
Total Lead	0.515	$\mathrm{mg/L}$	1	0.500	< 0.00326	103	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 58610 Prep Batch: 49975 Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14 Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Antimony	0.233	$\mathrm{mg/L}$	1	0.250	< 0.00440	93	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	Limit	RPD	$\operatorname{Limit}$
Total Antimony	0.234	mg/L	1	0.250	< 0.00440	94	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 58610 Prep Batch: 49975 Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14 Analyzed By: RR Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$
Total Selenium	0.437	m mg/L	1	0.500	< 0.00508	87	85 - 115

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	$\operatorname{Units}$	Dil.	Amount	$\operatorname{Result}$	$\operatorname{Rec}$ .	Limit	RPD	$\operatorname{Limit}$
Total Selenium	0.438	$\mathrm{mg/L}$	1	0.500	< 0.00508	88	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 58610 Prep Batch: 49975

Date Analyzed: 2009 - 04 - 15QC Preparation: 2009-04-14

Analyzed By: RR Prepared By: KV

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	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	$\operatorname{Dil}$ .	${ m Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Thallium	0.496	$\mathrm{mg/L}$	1	0.500	< 0.00488	99	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	$_{ m LCSD}$			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	Limit	RPD	$\operatorname{Limit}$
Total Thallium	0.496	$\mathrm{mg/L}$	1	0.500	< 0.00488	99	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 58610 Prep Batch: 49975

Date Analyzed: 2009-04-15 QC Preparation: 2009-04-14

Analyzed By: RR Prepared By: KV

KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Vanadium	0.243	$\mathrm{mg/L}$	1	0.250	< 0.000426	97	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		Rec.		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	Amount	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Vanadium	0.243	mg/L	1	0.250	< 0.000426	97	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR Prep Batch: 49975QC Preparation: 2009-04-14 Prepared By:

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$
Total Zinc	0.238	m mg/L	1	0.250	< 0.000465	95	85 - 115

 ${\it Work~Order:~9041322} \\ {\it HELSTF~Diesel~Spill~Groundwater}$ 

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	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	$\frac{\mathrm{Rec.}}{\mathrm{Limit}}$	RPD	Limit
Total Zinc	0.236	mg/L	1	0.250	< 0.000465	94	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

### Laboratory Control Spike (LCS-1)

QC Batch: 58615 Date Analyzed: 2009-04-16 Analyzed By: MN Prep Batch: 50042 QC Preparation: 2009-04-13 Prepared By: MN

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	$\mathrm{Rec}.$	$\operatorname{Limit}$
Phenol	0.0221	mg/L	1	0.0800	< 0.00165	28	10 - 37.6
2-Chlorophenol	0.0488	$\mathrm{mg/L}$	1	0.0800	< 0.00150	61	27.4 - 88.1
1,4-Dichlorobenzene (para)	0.0424	$\mathrm{mg/L}$	1	0.0800	< 0.00156	53	22.2 - 85.4
N-Nitrosodi-n-propylamine	0.0580	$\mathrm{mg/L}$	1	0.0800	< 0.00127	72	15.8 - 119
1,2,4-Trichlorobenzene	0.0527	m mg/L	1	0.0800	< 0.00193	66	25 - 99.5
Naphthalene	0.0588	m mg/L	1	0.0800	< 0.00165	74	24.8 - 93.1
4-Chloro-3-methylphenol	0.0604	m mg/L	1	0.0800	< 0.00120	76	28.4 - 110
${ m Acenapht}$ hylene	0.0562	$\mathrm{mg/L}$	1	0.0800	< 0.00136	70	33.3 - 110
${\it Acenaphthene}$	0.0551	$\mathrm{mg/L}$	1	0.0800	< 0.00132	69	31.5 - 107
4-Nitrophenol	0.0160	$\mathrm{mg/L}$	1	0.0800	< 0.00127	20	10 - 48.8
2,4-Dinitrotoluene	0.0561	$\mathrm{mg/L}$	1	0.0800	< 0.00139	70	27.8 - 126
Fluorene	0.0548	$\mathrm{mg/L}$	1	0.0800	< 0.00130	68	25.5 - 124
${ m Pentachlorophenol}$	0.0479	m mg/L	1	0.0800	< 0.000632	60	10 - 119
${ m Anthracene}$	0.0687	m mg/L	1	0.0800	< 0.00152	86	39.5 - 119
Phenanthrene	0.0704	m mg/L	1	0.0800	< 0.00144	88	41 - 119
Fluoranthene	0.0701	m mg/L	1	0.0800	< 0.00159	88	35.8 - 143
Pyrene	0.0734	m mg/L	1	0.0800	< 0.00135	92	35.8 - 132
$\operatorname{Benzo}(\operatorname{a}) \operatorname{anthracene}$	0.0712	$\mathrm{mg/L}$	1	0.0800	< 0.00138	89	40.1 - 128
Chrysene	0.0666	$\mathrm{mg/L}$	1	0.0800	< 0.00146	83	40.5 - 128
${ m Benzo}({ m b})$ fluoranthene	0.0689	$\mathrm{mg/L}$	1	0.0800	< 0.00126	86	32 - 134
$\operatorname{Benzo}(k)$ fluoranthene	0.0801	m mg/L	1	0.0800	< 0.00149	100	43.5 - 131
$\mathrm{Benzo}(\mathrm{a})\mathrm{pyrene}$	0.0772	m mg/L	1	0.0800	< 0.00155	96	43.5 - 140
Indeno(1,2,3-cd)pyrene	0.0735	$\mathrm{mg/L}$	1	0.0800	< 0.00195	92	39.7 - 159
${ m Dibenzo(a,h)}$ anthracene	0.0691	m mg/L	1	0.0800	< 0.0210	86	39.2 - 154
$\mathrm{Benzo}(\mathrm{g,h,i})$ perylene	0.0731	m mg/L	1	0.0800	< 0.00207	91	38 - 157

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$_{ m Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Phenol	0.0206	$\mathrm{mg/L}$	1	0.0800	< 0.00165	26	10 - 37.6	7	20
2-Chlorophenol	0.0454	$\mathrm{mg/L}$	1	0.0800	< 0.00150	57	27.4 - 88.1	7	20
1,4-Dichlorobenzene (para)	0.0394	mg/L	1	0.0800	< 0.00156	49	22.2 - 85.4	7	20
N-Nitrosodi-n-propylamine	0.0510	mg/L	1	0.0800	< 0.00127	64	15.8 - 119	13	20
1,2,4-Trichlorobenzene	0.0493	mg/L	1	0.0800	< 0.00193	62	25 - 99.5	7	20
Naphthalene	0.0545	mg/L	1	0.0800	< 0.00165	68	24.8 - 93.1	8	20
4-Chloro-3-methylphenol	0.0556	$\mathrm{mg/L}$	1	0.0800	< 0.00120	70	28.4 - 110	8	20

 $continued \dots$ 

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control spikes continued . . . LCSD Spike Matrix Rec. RPD Result Units Dil. Amount Result Limit RPD Param Rec. Limit Acenaphthylene 0.0529mg/L1 0.0800< 0.00136 66 33.3 - 110 6 20 Acenaphthene 1 0.080031.5 - 10720 0.0513mg/L< 0.0013264 7 4-Nitrophenol 0.0157mg/L1 0.0800< 0.00127 20 10 - 48.8 2 20 20 2,4-Dinitrotoluene 0.0539mg/L1 0.0800< 0.0013967 27.8 - 1264 Fluorene 0.0524mg/L1 0.0800< 0.00130 66 25.5 - 1244 20 Pentachlorophenol 0.0460mg/L1 0.0800< 0.00063258 10 - 119 4 20 Anthracene 0.0646mg/L1 0.0800< 0.00152 81 39.5 - 1196 20 1 7 Phenanthrene 0.0659mg/L0.0800< 0.0014482 41 - 119 20 Fluoranthene 0.06441 35.8 - 14320 mg/L0.0800< 0.0015980 8 7 Pyrene 0.0685mg/L1 0.0800< 0.00135 86 35.8 - 13220 1 20 Benzo(a)anthracene 0.0659mg/L0.0800< 0.0013882 40.1 - 1288 Chrysene 0.0631mg/L1 < 0.00146 40.5 - 1285 20 0.080079 Benzo(b)fluoranthene 0.0659mg/L82 32 - 134 4 20 1 0.0800< 0.00126 Benzo(k)fluoranthene 0.0725mg/L1 0.0800< 0.00149 91 43.5 - 13110 20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

mg/L

mg/L

mg/L

mg/L

0.0725

0.0683

0.0669

0.0687

1

1

1

1

0.0800

0.0800

0.0800

0.0800

91

85

84

86

< 0.00155

< 0.00195

< 0.0210

< 0.00207

43.5 - 140

39.7 - 159

39.2 - 154

38 - 157

6

7

3

6

20

20

 $\frac{20}{20}$ 

Surrogate		$rac{ ext{LCS}}{ ext{Result}}$	$egin{array}{c}  ext{LCSD} \  ext{Result} \end{array}$	$\operatorname{Units}$	Dil.	$rac{ ext{Spike}}{ ext{Amount}}$	LCS Rec.	$\begin{array}{c} { m LCSD} \\ { m Rec.} \end{array}$	$egin{array}{c} \operatorname{Rec.} \ \operatorname{Limit} \end{array}$
2-Fluorophenol		0.0452	0.0439	mg/L	1	0.0800	56	55	10 - 60.8
Phenol-d5		0.0298	0.0294	mg/L	1	0.0800	37	37	10 - 42.2
Nitrobenzene-d5	7,8	0.0922	0.0920	mg/L	1	0.0800	115	115	29.8 - 107
2-Fluorobiphenyl		0.0741	0.0711	mg/L	1	0.0800	93	89	26.2 - 121
2,4,6-Tribromophenol		0.0730	0.0722	mg/L	1	0.0800	91	90	31.5 - 130
Terphenyl-d14		0.106	0.0974	mg/L	1	0.0800	132	122	41.7 - 140

#### Laboratory Control Spike (LCS-1)

Benzo(a)pyrene

Indeno(1,2,3-cd)pyrene

Benzo(g,h,i)perylene

Dibenzo(a,h)anthracene

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Dissolved Chromium	0.0970	mg/L	1	0.100	< 0.000583	97	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	$\operatorname{Dil}$ .	$\mathbf{A}\mathbf{mount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Dissolved Chromium	0.0940	mg/L	1	0.100	< 0.000583	94	85 - 115	3	20

<sup>&</sup>lt;sup>7</sup>8270 Only - One basic surrogate is out of control limits. The other two basic surrogates show extraction was performed properly.

<sup>&</sup>lt;sup>8</sup>8270 Only - One basic surrogate is out of control limits. The other two basic surrogates show extraction was performed properly.

#### Laboratory Control Spike (LCS-1)

QC Batch: 58667 Date Analyzed: 2009-04-17 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

LCS Spike Matrix Rec. Param Result Units Dil. AmountResult Rec. Limit Total Calcium 51.9 50.0 < 0.117104 85 - 115 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	$\operatorname{Dil}$ .	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Calcium	53.0	mg/L	1	50.0	< 0.117	106	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 58667 Date Analyzed: 2009-04-17 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

LCS Spike Matrix Rec. Result Units Dil. Limit Param Amount Result Rec. Total Potassium 49.5mg/L50.0< 0.17299 85 - 115 1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$_{ m Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Potassium	50.3	mg/L	1	50.0	< 0.172	101	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 58667 Date Analyzed: 2009-04-17 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Total Magnesium 52.0 mg/L 50.0 < 0.160 104 85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	Amount	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Magnesium	52.8	mg/L	1	50.0	< 0.160	106	85 - 115	2	20

#### Laboratory Control Spike (LCS-1)

QC Batch: 58667 Date Analyzed: 2009-04-17 Prep Batch: 49975

Analyzed By: RR QC Preparation: 2009-04-14 Prepared By: KV

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Sodium	50.9	$\mathrm{mg/L}$	1	50.0	< 0.0500	102	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$_{ m Spike}$	Matrix		${ m Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Sodium	51.6	mg/L	1	50.0	< 0.0500	103	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: Analyzed By: 58672 Date Analyzed: 2009-04-10 MDPrep Batch: QC Preparation: 2009-04-10 Prepared By: MD50088

	LCS			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$
Hexavalent Chromium	0.479	$_{ m mg/L}$	1	0.500	< 0.00594	96	95.4 - 105

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$_{ m Spike}$	Matrix		$\mathrm{Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Hexavalent Chromium	0.491	mg/L	1	0.500	< 0.00594	98	95.4 - 105	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 58713Date Analyzed: 2009-04-20 Analyzed By: KV Prep Batch: 50124 QC Preparation: 2009-04-20 Prepared By: KV

	$_{ m LCS}$			$\operatorname{Spike}$	Matrix		Rec.
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Organic Carbon	49.1	mg/L	1	50.0	< 0.401	98	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		Rec.		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	$\operatorname{Rec}$ .	Limit	RPD	$\operatorname{Limit}$
Total Organic Carbon	50.0	mg/L	1	50.0	< 0.401	100	80 - 120	2	20

#### Laboratory Control Spike (LCS-1)

QC Batch: 58752 Date Analyzed: 2009-04-20 Analyzed By: TP Prep Batch: 50149 QC Preparation: 2009-04-20 Prepared By: TP

LCS Spike Matrix Rec. Param Result Units Dil. A mount Result Rec. Limit Total Mercury 0.0009970.00100 < 0.0000329 100 88.3 - 111 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	A mount	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Mercury	0.00101	mg/L	1	0.00100	< 0.0000329	101	88.3 - 111	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 58921 Date Analyzed: 2009-04-24 Analyzed By: AH Prep Batch: 50291 QC Preparation: 2009-04-23 Prepared By: AH

	LCS			$\operatorname{Spike}$	Matrix		${ m Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$
Oil and Grease	34.3	$_{ m mg/L}$	1	40.0	< 3.46	86	78 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	$\mathrm{Rec}.$	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Oil and Grease	35.0	mg/L	1	40.0	< 3.46	88	78 - 114	2	18

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JR
Prep Batch: 50331 QC Preparation: 2009-04-16 Prepared By: JR

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$
Bromide	9.94	$\mathrm{mg/L}$	1	10.0	< 0.0394	99	94.2 - 105

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	$\mathrm{Rec.}$	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Bromide	9.85	mg/L	1	10.0	< 0.0394	98	94.2 - 105	1	20

#### Laboratory Control Spike (LCS-1)

QC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JR
Prep Batch: 50331 QC Preparation: 2009-04-16 Prepared By: JR

	$_{ m LCS}$			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
Chloride	49.1	$_{ m mg/L}$	1	50.0	< 0.640	98	93.1 - 99.9

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Chloride	48.6	mg/L	1	50.0	< 0.640	97	93.1 - 99.9	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JR
Prep Batch: 50331 QC Preparation: 2009-04-16 Prepared By: JR

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Fluoride	10.0	$_{ m mg/L}$	1	10.0	< 0.0434	100	93.1 - 103

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	$\operatorname{Dil}$ .	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Fluoride	9.94	mg/L	1	10.0	< 0.0434	99	93.1 - 103	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	$\operatorname{Result}$	$\operatorname{Units}$	$\mathrm{Dil}.$	${f Amount}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
Sulfate	48.3	mg/L	1	50.0	< 0.504	97	92.6 - 104

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Sulfate	47.8	mg/L	1	50.0	< 0.504	96	92.6 - 104	1	20

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HELSTF Diesel Spill Groundwater

## Laboratory Control Spike (LCS-1)

QC Batch: 59150 Date Analyzed: 2009-04-27 Analyzed By: DS Prep Batch: 50476 QC Preparation: 2009-04-14 Prepared By: DS

	LCS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
HMX	2.29	$\mu { m g/L}$	1	2.50	< 0.123	92	63.5 - 125
RDX	2.44	$\mu { m g}/{ m L}$	1	2.50	< 0.298	98	74.5 - 124
1,3,5-Trinitrobenzene	2.43	$\mu { m g}/{ m L}$	1	2.50	< 0.339	97	54.1 - 131
1,3-Dinitrobenzene	2.44	$\mu { m g}/{ m L}$	1	2.50	< 0.389	98	72 - 112
Nitrobenzene	2.40	$\mu { m g}/{ m L}$	1	2.50	< 0.379	96	72.5 - 126
Tetryl	2.26	$\mu { m g}/{ m L}$	1	2.50	< 0.413	90	35.9 - 149
TNT	2.50	$\mu { m g}/{ m L}$	1	2.50	< 0.464	100	40.7 - 129
4-Amino-DNT	2.54	$\mu { m g}/{ m L}$	1	2.50	< 0.319	102	80 - 120
2-Amino-DNT	2.58	$\mu { m g}/{ m L}$	1	2.50	< 0.391	103	80 - 120
2,6-DNT	2.30	$\mu { m g}/{ m L}$	1	2.50	< 0.323	92	80 - 120
2,4-DNT	2.46	$\mu { m g}/{ m L}$	1	2.50	< 0.366	98	80 - 120
2-NT	2.45	$\mu { m g}/{ m L}$	1	2.50	< 0.379	98	49.8 - 139
4-NT	2.31	$\mu { m g}/{ m L}$	1	2.50	< 0.398	92	56.3 - 141
3-NT	2.43	$\mu { m g}/{ m L}$	1	2.50	< 0.346	97	66.2 - 129

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
HMX	2.04	$\mu \mathrm{g/L}$	1	2.50	< 0.123	82	63.5 - 125	12	20
RDX	2.40	$\mu { m g}/{ m L}$	1	2.50	< 0.298	96	74.5 - 124	2	20
1,3,5-Trinitrobenzene	2.32	$\mu { m g}/{ m L}$	1	2.50	< 0.339	93	54.1 - 131	5	20
1,3-Dinitrobenzene	2.40	$\mu { m g}/{ m L}$	1	2.50	< 0.389	96	72 - 112	2	20
Nitrobenzene	2.46	$\mu { m g/L}$	1	2.50	< 0.379	98	72.5 - 126	2	20
Tetryl	2.14	$\mu { m g}/{ m L}$	1	2.50	< 0.413	86	35.9 - 149	5	20
TNT	2.52	$\mu { m g/L}$	1	2.50	< 0.464	101	40.7 - 129	1	20
4-Amino-DNT	2.71	$\mu { m g/L}$	1	2.50	< 0.319	108	80 - 120	6	20
2-Amino-DNT	2.59	$\mu { m g/L}$	1	2.50	< 0.391	104	80 - 120	0	20
2,6-DNT	2.55	$\mu { m g}/{ m L}$	1	2.50	< 0.323	102	80 - 120	10	20
2,4-DNT	2.62	$\mu { m g}/{ m L}$	1	2.50	< 0.366	105	80 - 120	6	20
2-NT	2.42	$\mu { m g}/{ m L}$	1	2.50	< 0.379	97	49.8 - 139	1	20
4-NT	2.31	$\mu { m g}/{ m L}$	1	2.50	< 0.398	92	56.3 - 141	0	20
3-NT	2.33	$\mu { m g}/{ m L}$	1	2.50	< 0.346	93	66.2 - 129	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	$_{ m LCSD}$			$\operatorname{Spike}$	$_{ m LCS}$	$_{ m LCSD}$	$\mathrm{Rec}.$
$\operatorname{Surrogate}$	$\operatorname{Result}$	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Rec.	$\mathrm{Rec}.$	${f Limit}$
1,2-Dinitrobenzene	2.29	2.33	$\mu { m g/L}$	1	2.50	92	93	53 - 134

Matrix Spike (MS-1) Spiked Sample: 192904

QC Batch: 58516 Date Analyzed: 2009-04-13 Analyzed By: Prep Batch: 49961 QC Preparation: 2009-04-13 Prepared By:

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		MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param		Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$
DRO	9	313	mg/L	1	25.0	420	-428	29.8 - 181

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param		Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
DRO	10	334	mg/L	1	25.0	420	-344	29.8 - 181	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			$\operatorname{Spike}$	MS	MSD	${ m Rec.}$
Surrogate	$\operatorname{Result}$	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\mathrm{Rec.}$	$\mathrm{Rec.}$	$\operatorname{Limit}$
n-Triacontane	13.7	14.2	$_{ m mg/L}$	1	10	137	142	34.4 - 185

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58597 Date Analyzed: 2009-04-15 Analyzed By: ER
Prep Batch: 50027 QC Preparation: 2009-04-15 Prepared By: ER

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
GRO	5.82	mg/L	5	5.00	1.45	87	44.6 - 142

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
GRO	5.94	mg/L	5	5.00	1.45	90	44.6 - 142	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			$\operatorname{Spike}$	MS	MSD	$\mathrm{Rec}.$
Surrogate	Result	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\mathrm{Rec}.$	Rec.	$\operatorname{Limit}$
Trifluorotoluene (TFT)	0.488	0.484	m mg/L	5	0.5	98	97	57.8 - 132
4-Bromofluorobenzene (4-BFB)	0.516	0.518	$\mathrm{mg/L}$	5	0.5	103	104	69.4 - 128

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Silver	0.126	$\mathrm{mg/L}$	1	0.125	< 0.00111	101	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

<sup>9</sup> Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

<sup>&</sup>lt;sup>10</sup> Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

 ${\it Work~Order:~9041322} \\ {\it HELSTF~Diesel~Spill~Groundwater} \\$ 

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	MSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Silver	0.129	mg/L	*	0.125	< 0.00111	103	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSMatrix Spike Rec. Param Result Units Dil. Amount Result Limit Rec. Total Aluminum 0.874 1.00 < 0.0030175 - 125 mg/L87 1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSD Spike Matrix RPD Rec. Param Result Units Dil. A mount Result Rec. Limit RPD Limit Total Aluminum 0.8961.00 < 0.0030120 mg/L75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike MatrixRec. Param Units Result Dil.  ${
m Amount}$ Result Rec. Limit Total Arsenic 0.599mg/L0.5000.081 104 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSD RPD Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit RPD Limit 0.619 0.500108 20 Total Arsenic mg/L0.08175 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit 0.9881.00 Total Barium mg/L0.02696 75 - 125

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	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Barium	1.01	mg/L	1	1.00	0.026	98	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Total Beryllium 0.0230 0.0250 < 0.00045075 - 125 mg/L921

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**MSD** Spike Matrix RPD Rec. Param Result Units Dil. Amount Result Rec. Limit RPD Limit Total Beryllium 20 0.0230mg/L0.0250< 0.00045092 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit 0.227 Total Cadmium mg/L0.250< 0.000303 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSDRPD Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit RPD Limit 0.234 0.25020 Total Cadmium mg/L< 0.000303 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit 0.226 0.250 Total Cobalt mg/L0.00688 75 - 125

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RR

KV

	MCD			C '1	3.4		D		DDD
	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	$\operatorname{Dil}$ .	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	Limit
Total Cohalt	0.233	mø/L	1	0.250	0.006	91	75 - 125	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By:
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By:

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Limit Rec. Total Chromium 0.0920 0.100 0.003 75 - 125 mg/L89 1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSD Spike Matrix RPD Rec. Param Result Units Dil. Amount Result Rec. Limit RPD Limit Total Chromium 0.0940 20 mg/L0.100 0.003 91 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit 75 - 125 Total Copper 0.125mg/L0.125< 0.000843100

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSDRPD Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit RPD Limit 0.130 0.125< 0.000843 20 Total Copper mg/L104 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike MatrixRec. Param Result Units Dil. Amount Result Rec. Limit 5.10 4.66 Total Iron mg/L0.50088 75 - 125

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	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	Limit
Total Iron	5.11	mg/L	1	0.500	4.66	90	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Total Manganese 0.4570.250 0.25775 - 125 mg/L80 1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSD Spike Matrix Rec. RPD Param Result Units Dil. Amount Result Rec. Limit RPD Limit Total Manganese 20 0.476mg/L0.2500.25788 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike MatrixRec. Param Units Result Dil.  ${
m Amount}$ Result Rec. Limit Total Molybdenum 0.507 mg/L0.5000.02497 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSD RPD Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit RPD Limit 0.521 0.5000.02420 Total Molybdenum mg/L99 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Total Nickel 0.3050.250 mg/L0.09584 75 - 125

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	MCD			C :1	M-4-:		D		מממ
	MSD			$\operatorname{Spike}$	Matrix		${ m Rec}$ .		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Nickel	0.314	$_{ m mg/L}$	1	0.250	0.095	88	75 - 125	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Total Phosphorous 0.546 0.500 0.05299 75 - 125 mg/L1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSD Spike Matrix RPD Rec. Param Result Units Dil. Amount Result Rec. Limit RPD Limit Total Phosphorous 102 20 0.561mg/L0.5000.05275 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike Matrix Rec. Param Dil. Result Units A mount Result Rec. Limit Total Lead 0.465mg/L0.500< 0.0032693 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSD RPD Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit RPD Limit 0.479 0.500 20 Total Lead mg/L< 0.00326 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit 0.227< 0.00440Total Antimony mg/L0.25091 75 - 125

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Antimony	0.222	mg/L	1	0.250	< 0.00440	89	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

 QC Batch:
 58610
 Date Analyzed:
 2009-04-15

 Prep Batch:
 49975
 QC Preparation:
 2009-04-14

Analyzed By: RR Prepared By: KV

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MSMatrix Spike Rec. Param Result Units Dil. Amount Result Rec. Limit Total Selenium 0.4410.500< 0.0050875 - 125 mg/L88 1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Selenium	0.453	mg/L	1	0.500	< 0.00508	91	75 - 125	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Thallium	0.427	$_{ m mg/L}$	1	0.500	< 0.00488	85	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Thallium	0.440	mg/L	1	0.500	< 0.00488	88	75 - 125	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\mathrm{Rec}.$	$\operatorname{Limit}$
Total Vanadium	0.245	$\mathrm{mg/L}$	1	0.250	0.004	96	75 - 125

 ${\it Work~Order:~9041322} \\ {\it HELSTF~Diesel~Spill~Groundwater} \\$ 

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	MSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Vanadium	0.250	mg/L	1	0.250	0.004	98	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Total Zinc 0.2470.250 0.007 96 75 - 125 mg/L1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSD Spike Matrix RPD Rec. Param Result Units Dil. Amount Result Rec. Limit RPD Limit Total Zinc 0.24720 mg/L0.2500.00796 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192889

QC Batch: 58656 Date Analyzed: 2009-04-17 Analyzed By: RR
Prep Batch: 50044 QC Preparation: 2009-04-16 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Dissolved Chromium 0.0960 mg/L0.100< 0.00058396 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSDRPD Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit RPD Limit 0.0930 0.100 20 Dissolved Chromium mg/L< 0.00058375 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58667 Date Analyzed: 2009-04-17 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit 182 50.0 126 112 Total Calcium mg/L75 - 125

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RR

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	3.10D			G 11	3.5		Б.		DDD
	MSD			${ m Spike}$	Matrix		${ m Rec.}$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	$\mathrm{Rec}.$	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Calcium	181	$_{ m mg/L}$	1	50.0	126	110	75 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58667 Date Analyzed: 2009-04-17 Analyzed By: Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By:

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Total Potassium 85.0 50.0 30.5 109 75 - 125 mg/L1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSD Spike Matrix RPD Rec. Param Result Units Dil. Amount Result Rec. Limit RPD Limit 30.5Total Potassium 80.2 50.020 mg/L99 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58667 Date Analyzed: 2009-04-17 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike MatrixRec. Param Units Result Dil.  ${
m Amount}$ Result Rec. Limit Total Magnesium 251 mg/L50.0200 102 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSD RPD Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit RPD Limit 253 50.0 200 106 20 Total Magnesium mg/L75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58667 Date Analyzed: 2009-04-17 Analyzed By: RR
Prep Batch: 49975 QC Preparation: 2009-04-14 Prepared By: KV

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit 1200 50.0 120 Total Sodium mg/L1140 75 - 125

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	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Sodium	1200	mg/L	1	50.0	1140	120	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58672 Date Analyzed: 2009-04-10 Analyzed By: MD Prep Batch: 50088 QC Preparation: 2009-04-10 Prepared By: MD

MSMatrix Rec. Spike Param Result Units Dil. Amount Result Limit Rec. Hexavalent Chromium 0.632 0.556 0.049 105 mg/L1.11 80.1 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Hexavalent Chromium	0.634	mg/L	1.11	0.556	0.049	105	80.1 - 118	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 193081

QC Batch: 58694 Date Analyzed: 2009-04-16 Analyzed By: AH Prep Batch: 50102 QC Preparation: 2009-04-16 Prepared By: AH

MSSpike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Ammonia-N 4.87 mg/L5.00< 0.35397 30.7 - 141

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	Amount	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Ammonia-N	4.93	mg/L	1	5.00	< 0.353	99	30.7 - 141	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 193121

QC Batch: 58704 Date Analyzed: 2009-04-17 Analyzed By: AH Prep Batch: 50107 QC Preparation: 2009-04-17 Prepared By: AH

MSMatrix Spike Rec. Limit Param Result Units Dil. Amount Result Rec. Total Cyanide 0.107 0.120 < 0.0110 51.9 - 142 mg/L89

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HELSTF Diesel Spill Groundwater

	MSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	Limit
Total Cyanide	0.111	mg/L	1	0.120	< 0.0110	92	51.9 - 142	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Matrix Spike (xMS-1) Spiked Sample:

QC Batch: 58713 Date Analyzed: 2009-04-20 Analyzed By: KV Prep Batch: 50124 QC Preparation: 2009-04-20 Prepared By: KV

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Limit Rec. Total Organic Carbon 175 50.0 130 90 80 - 120 mg/L1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param		Result	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Organic Carbon	12	176	mg/L	1	50.0	130	92	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Matrix Spike (MS-1) Spiked Sample: 192903

QC Batch: 58752 Date Analyzed: 2009-04-20 Analyzed By: TP
Prep Batch: 50149 QC Preparation: 2009-04-20 Prepared By: TP

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	Result	$\operatorname{Units}$	Dil.	${ m Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Total Mercury	0.000861	mg/L	1	0.00100	< 0.0000329	86	75 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	$\operatorname{Units}$	Dil.	Amount	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Mercury	0.000848	mg/L	1	0.00100	< 0.0000329	85	75 - 121	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Matrix Spike (MS-1) Spiked Sample: 193082

QC Batch: 58769 Date Analyzed: 2009-04-20 Analyzed By: AH Prep Batch: 50105 QC Preparation: 2009-04-17 Prepared By: AH

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$
Total Kjeldahl Nitrogen - N	51.5	${ m mg/L}$	1	50.0	< 2.45	103	53.5 - 129

<sup>&</sup>lt;sup>11</sup>RE-RUNNING MS/MSD BECAUSE SAMPLE WAS OVER CURVE •

<sup>&</sup>lt;sup>12</sup>RE-RUNNING MS/MSD BECAUSE SAMPLE WAS OVER CURVE •

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HELSTF Diesel Spill Groundwater

	MSD			$\operatorname{Spike}$	Matrix		Rec.		RPD
Param	Result	$\operatorname{Units}$	Dil.	Amount	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Total Kjeldahl Nitrogen - N	47.9	mg/L	1	50.0	< 2.45	96	53.5 - 129	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 193136

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Limit Rec. 0.380 Nitrate and Nitrite as N 0.200 0.345 80 - 120 mg/L1 18

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MSD			$_{ m Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param		Result	Units	Dil.	Amount	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Nitrate and Nitrite as N	14	0.388	mg/L	1	0.200	0.345	22	80 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192905

QC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JR
Prep Batch: 50331 QC Preparation: 2009-04-16 Prepared By: JR

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec.}$
Param	Result	$\operatorname{Units}$	Dil.	${f Amount}$	$\operatorname{Result}$	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Bromide	5500	mg/L	556	5560	<21.9	99	92.8 - 106

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Bromide	5490	mg/L	556	5560	<21.9	99	92.8 - 106	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192905

QC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JR Prep Batch: 50331 QC Preparation: 2009-04-16 Prepared By: JR

	MS			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${f Amount}$	Result	$\operatorname{Rec}$ .	$\operatorname{Limit}$
Chloride	28400	${ m mg/L}$	556	27800	490	100	87.3 - 103

<sup>&</sup>lt;sup>13</sup> Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

<sup>&</sup>lt;sup>14</sup>Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

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	MSD			$_{ m Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	Amount	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Chloride	28300	mg/L	556	27800	490	100	87.3 - 103	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192905

QC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JR
Prep Batch: 50331 QC Preparation: 2009-04-16 Prepared By: JR

MSMatrix Spike Rec. Param Result Units Dil. Amount Result Rec. Limit Fluoride 5570 556 5560 <24.1 100 92.3 - 102 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Fluoride	5540	mg/L	556	5560	<24.1	100	92.3 - 102	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192905

MSSpike Matrix Rec. Param Units Result Limit Result Dil. Amount Rec. Sulfate 31400 mg/L556 27800 2160 105 86.4 - 101

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$\operatorname{Spike}$	Matrix		$\operatorname{Rec}$ .		RPD
Param	$\operatorname{Result}$	$\operatorname{Units}$	Dil.	${ m Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Sulfate	31200	$_{ m mg/L}$	556	27800	2160	104	86.4 - 101	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 58513 Date Analyzed: 2009-04-10 Analyzed By: JG

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	Date
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
pН		s.u.	7.00	6.96	99	98 - 102	2009-04-10

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HELSTF Diesel Spill Groundwater

Standard	(CCV-1)						
QC Batch:	58513		Date Ar	nalyzed: 2009-	04-10	Ana	lyzed By: JG
			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
pН		s.u.	7.00	6.98	100	98 - 102	2009-04-10

Standard	(CCV-1)
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QC Batch:	58516	Date Analyzed:	2009-04-13	Analyzed By:

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	Date
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
DRO		$_{ m mg/L}$	250	294	118	80 - 120	2009-04-13

# Standard (CCV-2)

QC Batch: 58516 Date Analyzed: 2009-04-13 Analyze
---------------------------------------------------

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	Found	Percent	$\operatorname{Recovery}$	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
DRO		mg/L	250	291	116	80 - 120	2009-04-13

## Standard (CCV-1)

OC Batch: 58597	Date Analyzed: 2009-04-15	Analyzed By: ER.

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	Analyzed
GRO		$\mathrm{mg/L}$	1.00	0.942	94	80 - 120	2009-04-15

# Standard (CCV-2)

QC Batch: 58597 Date Analyzed: 2009-04-15 Analyzed By: ER

			$rac{ ext{CCVs}}{ ext{True}}$	${ m CCVs} \ { m Found}$	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	Analyzed
GRO		$\mathrm{mg/L}$	1.00	0.914	91	80 - 120	2009-04-15

#### Standard (CCV-1)

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR

Report Date: May 6, 2009 Work Order: 9041322 Page Number: 60 of 76

	y		HELSTF Die	esel Spill Grou	ındwater	0	
Param	$\operatorname{Flag}$	$_{ m Units}$	CCVs True Conc.	$\begin{array}{c} { m CCVs} \\ { m Found} \\ { m Conc.} \end{array}$	CCVs Percent Recovery	Percent Recovery Limits	$\begin{array}{c} \text{Date} \\ \text{Analyzed} \end{array}$
Total Silver		$\mathrm{mg/L}$	0.125	0.122	98	90 - 110	2009-04-15
Standard (CC	CV-1)						
QC Batch: 58610			Date Analyz	zed: 2009-04-	Analyzed By: RR		
Param	$\operatorname{Flag}$	$_{ m Units}$	CCVs True Conc.	$\begin{array}{c} {\rm CCVs} \\ {\rm Found} \\ {\rm Conc.} \end{array}$	CCVs Percent Recovery	Percent Recovery Limits	$egin{array}{c} { m Date} \ { m Analyzed} \end{array}$
Total Aluminum		$\mathrm{mg/L}$	1.00	0.984	98	90 - 110	2009-04-15
Standard (CC QC Batch: 58	,		Date Analyz		CCVs	Anal; Percent	yzed By: RR
D	T)	TT 14	$\operatorname{True}$	CCVs Found	Percent	Recovery	Date
Param Total Arsenic	Flag	$\frac{\mathrm{Units}}{\mathrm{mg/L}}$	Conc. 1.00	Conc. 0.979	Recovery 98	Limits 90 - 110	Analyzed 2009-04-15
Standard (CC QC Batch: 58	·		Date Analyz	zed: 2009-04-	15	Anal	yzed By: RR
Param	$\operatorname{Flag}$	$\operatorname{Units}$	CCVs True Conc.	$\begin{array}{c} { m CCVs} \\ { m Found} \\ { m Conc.} \end{array}$	CCVs Percent Recovery	Percent Recovery Limits	$egin{array}{c} { m Date} \ { m Analyzed} \end{array}$
Total Barium	riag	mg/L	1.00	1.02	102	90 - 110	2009-04-15
Standard (CC QC Batch: 58	,		Date Analyz	zed: 2009-04- CCVs	·15 CCVs	Anal <sub>y</sub> Percent	yzed By: RR
			OC VS	00 48	OOVS	rercem	D .

## Standard (CCV-1)

Total Beryllium

Flag

Units

mg/L

Param

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR

Found

 ${\rm Conc.}$ 

0.966

Percent

Recovery

97

Recovery

 ${\bf Limits}$ 

90 - 110

True

 ${\rm Conc.}$ 

1.00

Date

 ${\bf Analyzed}$ 

2009-04-15

Report Date: May 6, 2009 Work Order: 9041322 Page Number: 61 of 76

CVs Percent Recovery Date Limits Analyzed 98 90 - 110 2009-04-15  Analyzed By: RR  CVs Percent Recovery Date overy Limits Analyzed 98 90 - 110 2009-04-15
Analyzed By: RR  CVs Percent reent Recovery Date overy Limits Analyzed
CVs Percent recent Recovery Date Analyzed
CVs Percent recent Recovery Date Analyzed
rcent Recovery Date overy Limits Analyzed
98 90 - 110 2009-04-18
Analyzed By: RR
CCVs Percent ercent Recovery Date covery Limits Analyzed
99 90 - 110 2009-04-15
Analonad D. D.D.
Analyzed By: RR
CVs Percent Cent Recovery Date Overy Limits Analyzed
97 90 - 110 2009-04-15
•

## Standard (CCV-1)

Flag

 ${\bf Units}$ 

mg/L

Param

Total Iron

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR

 $\mathrm{CCVs}$ 

 ${\rm Found}$ 

 ${\rm Conc.}$ 

1.01

 $\mathrm{CCVs}$ 

Percent

Recovery

101

Percent

Recovery

 ${\bf Limits}$ 

90 - 110

Date

 ${\bf Analyzed}$ 

2009-04-15

 $\mathrm{CCVs}$ 

True

 ${\rm Conc.}$ 

1.00

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HELSTF Diesel Spill Groundwater

Param	$\operatorname{Flag}$	$\operatorname{Units}$	$egin{array}{c} \mathrm{CCVs} \\ \mathrm{True} \\ \mathrm{Conc.} \end{array}$	$\begin{array}{c} { m CCVs} \\ { m Found} \\ { m Conc.} \end{array}$	$egin{array}{c} { m CCVs} \\ { m Percent} \\ { m Recovery} \end{array}$	$egin{array}{l}  ext{Percent} \  ext{Recovery} \  ext{Limits} \end{array}$	$\begin{array}{c} {\rm Date} \\ {\rm Analyzed} \end{array}$
Total Manganese		mg/L	1.00	0.948	95	90 - 110	2009-04-15

### Standard (CCV-1)

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	Date
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Molvbdenum		mg/L	1.00	0.937	94	90 - 110	2009-04-15

#### Standard (CCV-1)

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	Date
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
Total Nickel		mg/L	1.00	0.962	96	90 - 110	2009-04-15

#### Standard (CCV-1)

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Phosphorous		mg/L	5.00	4.74	95	90 - 110	2009-04-15

## Standard (CCV-1)

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Lead		$_{ m mg/L}$	1.00	1.00	100	90 - 110	2009-04-15

## Standard (CCV-1)

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR

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	, 0, 2000		HELSTF Diesel	Spill Grou	ndwater	1 480 110	
Param	$\operatorname{Flag}$	$\operatorname{Units}$	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$\begin{array}{c} \text{Date} \\ \text{Analyzed} \end{array}$
Total Antimony		$\mathrm{mg/L}$	1.00	0.956	96	90 - 110	2009-04-15
Standard (CCV-	-1)						
QC Batch: 58610	)		Date Analyzed:	2009-04-3	15	Analyzed By: RR	
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$egin{array}{c} \mathrm{CCVs} \\ \mathrm{True} \\ \mathrm{Conc.} \end{array}$	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$egin{aligned}  ext{Date} \  ext{Analyzed} \end{aligned}$
Total Selenium		$\mathrm{mg/L}$	1.00	0.973	97	90 - 110	2009-04-15
Standard (CCV-QC Batch: 58610	•		Date Analyzed:	2009-04-3	15	Anal	yzed By: RR
Param	$\operatorname{Flag}$	${ m Units}$	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$egin{aligned}  ext{Date} \  ext{Analyzed} \end{aligned}$
Total Thallium	_	$\mathrm{mg/L}$	1.00	0.978	98	90 - 110	2009-04-15
Standard (CCV-QC Batch: 58610	•		Date Analyzed:	2009-04-	15	Anal	yzed By: RR
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$egin{array}{c} \mathrm{CCVs} \\ \mathrm{True} \\ \mathrm{Conc.} \end{array}$	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$egin{aligned}  ext{Date} \  ext{Analyzed} \end{aligned}$
Total Vanadium	- 146	mg/L	1.00	0.994	99	90 - 110	2009-04-15
Standard (CCV-QC Batch: 58610	•		Date Analyzed:	2009-04-	15	Anal	yzed By: RR

# Standard (CCV-2)

Flag

Units

mg/L

Param

Total Zinc

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR

 $\mathrm{CCVs}$ 

 ${\rm Found}$ 

 ${\rm Conc.}$ 

1.03

 ${\rm CCVs}$ 

Percent

Recovery

103

Percent

Recovery

Limits

90 - 110

Date

 ${\bf Analyzed}$ 

2009-04-15

 $\mathrm{CCVs}$ 

 ${\rm True}$ 

 ${\rm Conc.}$ 

1.00

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		HELDIT DIE	esel Spill Grou	ındwater		
lag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$egin{aligned}  ext{Date} \  ext{Analyzed} \end{aligned}$
	mg/L	0.125	0.123	98	90 - 110	2009-04-15
)						
		Date Analyz	sed: 2009-04-	15	Analyzed By: RR	
Flag	Units	$egin{array}{c} \mathrm{CCVs} \\ \mathrm{True} \\ \mathrm{Conc.} \end{array}$	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$egin{aligned}  ext{Date} \  ext{Analyzed} \end{aligned}$
	$\mathrm{mg/L}$	1.00	0.967	97	90 - 110	2009-04-15
)		Date Analyz	ed: 2009-04-	15	Analy	vzed By: RR
Flag	Units	CCVs True	$\begin{array}{c} { m CCVs} \\ { m Found} \\ { m Conc.} \end{array}$	CCVs Percent	Percent Recovery	$egin{aligned}  ext{Date} \  ext{Analyzed} \end{aligned}$
Tiag		1.00	0.976	98	90 - 110	2009-04-15
)		Date Analyz	ed: 2009-04-	15	Analy	vzed By: RR
		aau	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
Flag	$\operatorname{Units}$	$egin{array}{c} \mathrm{CCVs} \\ \mathrm{True} \\ \mathrm{Conc.} \end{array}$	Found Conc.	Percent Recovery	$egin{array}{c} { m Recovery} \\ { m Limits} \end{array}$	$egin{array}{c} { m Date} \ { m Analyzed} \end{array}$
	)	m mg/L )  Flag Units $ m mg/L$ )  Flag Units $ m mg/L$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Date Analyzed: 2009-04-   CCVs   CCVs     True   Found     Flag   Units   Conc.   Conc.     mg/L   1.00   0.967      Date Analyzed: 2009-04-   CCVs   CCVs     True   Found     CCVs   CCVs     True   Found     Flag   Units   Conc.   Conc.     mg/L   1.00   0.976	Date Analyzed: 2009-04-15     CCVs	Date Analyzed: 2009-04-15   Analy

## Standard (CCV-2)

Total Beryllium

Param

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR

 $\mathrm{CCVs}$ 

 ${\rm Found}$ 

 ${\rm Conc.}$ 

0.969

 $\mathrm{CCVs}$ 

Percent

Recovery

97

Percent

Recovery

 ${\bf Limits}$ 

90 - 110

Date

 ${\bf Analyzed}$ 

2009-04-15

 $\mathrm{CCVs}$ 

 ${\rm True}$ 

 ${\rm Conc.}$ 

1.00

Units

mg/L

Flag

Report Date: May 6, 2009			Work ( HELSTF Die	Order: 904132 sel Spill Grou	O				
Param	$\operatorname{Flag}$	$\operatorname{Units}$	CCVs True Conc.	$\begin{array}{c} { m CCVs} \\ { m Found} \\ { m Conc.} \end{array}$	$egin{array}{c}  ext{CCVs} \  ext{Percent} \  ext{Recovery} \end{array}$	Percent Recovery Limits	$egin{aligned}  ext{Date} \  ext{Analyzed} \end{aligned}$		
Total Cadmium	0	mg/L	1.00	0.968	97	90 - 110	2009-04-15		
Standard (CC	V-2)								
QC Batch: 586	10		Date Analyz	Date Analyzed: 2009-04-15			Analyzed By: RR		
D	F)	TT 1.	CCVs True	$\begin{array}{c} {\rm CCVs} \\ {\rm Found} \end{array}$	$\begin{array}{c} { m CCVs} \\ { m Percent} \end{array}$	Percent Recovery	Date		
Param Total Cobalt	Flag	$\frac{\mathrm{Units}}{\mathrm{mg/L}}$	Conc. 1.00	Conc. 0.977	Recovery 98	Limits 90 - 110	Analyzed 2009-04-15		
Standard (CC') QC Batch: 586	,		Date Analyz	ed: 2009-04-	15	Anal	vzed By: RR		
D	T.I.	T7. 1.	${ m CCVs} \ { m True} \ { \ { m $	$\begin{array}{c} { m CCVs} \\ { m Found} \end{array}$	CCVs Percent	Percent Recovery	Date		
Param Total Chromium	Flag	$\frac{\rm Units}{\rm mg/L}$	Conc. 1.00	Conc. 0.989	Recovery 99	Limits 90 - 110	Analyzed 2009-04-15		
Standard (CC) QC Batch: 586	V-2)	С	Date Analyz				yzed By: RR		

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc.}$	Recovery	Limits	Analyzed
Total Copper		m mg/L	1.00	0.976	98	90 - 110	2009-04-15

# Standard (CCV-2)

QC Batch: 58610 Analyzed By: RR Date Analyzed: 2009-04-15

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Iron		mg/L	1.00	1.01	101	90 - 110	2009-04-15

# Standard (CCV-2)

QC Batch: 58610 Analyzed By: RR Date Analyzed: 2009-04-15

Report Date: May 6, 2009			Work Ord HELSTF Diesel	er: 9041322 Spill Ground	Page Number: 66 of 76		
Param Total Manganese	Flag	$rac{ m Units}{ m mg/L}$	CCVs True Conc. 1.00	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits 90 - 110	Date Analyzed 2009-04-15
Total Hanganese		6/ 12	1.00	0.000	01	50 110	2000 01 10
Standard (CCV-2)							
QC Batch: 58610			Date Analyzed:	2009-04-15		Analy	zed By: RR
Param	$\operatorname{Flag}$	Units	$\begin{array}{c} {\rm CCVs} \\ {\rm True} \\ {\rm Conc.} \end{array}$	$\begin{array}{c} {\rm CCVs} \\ {\rm Found} \\ {\rm Conc.} \end{array}$	CCVs Percent Recovery	Percent Recovery Limits	$egin{aligned}  ext{Date} \  ext{Analyzed} \end{aligned}$
Total Molybdenum	- 100	mg/L		0.935	94	90 - 110	2009-04-15
Standard (CCV-2)  QC Batch: 58610			Date Analyzed:	2009-04-15		Analy	zed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	Date
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
Total Nickel		$\mathrm{mg/L}$	1.00	0.955	96	90 - 110	2009-04-15

# Standard (CCV-2)

QC Batch:	58610	Date Analyzed:	2009-04-15	Analyzed By:	RR
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			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	Date
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Phosphorous		$\mathrm{mg/L}$	5.00	4.71	94	90 - 110	2009-04-15

# Standard (CCV-2)

 $QC \ Batch: \ 58610$ Date Analyzed: 2009-04-15 Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Lead		mg/L	1.00	0.990	99	90 - 110	2009-04-15

# Standard (CCV-2)

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR Report Date: May 6, 2009 Work Order: 9041322 Page Number: 67 of 76

Report Date. May	HELSTF Diesel Spill Groundwater						r age rvumber. 07 or 70		
Param Total Antimony	Flag	Units	CCVs True Conc. 1.00	CCVs Found Conc. 0.959	CCVs Percent Recovery 96	Percent Recovery Limits 90 - 110	Date Analyzed 2009-04-15		
Total Antimony		m mg/L	1.00	0.959	90	90 - 110	2009-04-15		
Standard (CCV-	2)								
QC Batch: 58610			Date Analyze	ed: 2009-04-	15	Analy	yzed By: RR		
_			${ m CCVs} \ { m True}$	$\begin{array}{c} { m CCVs} \\ { m Found} \end{array}$	$\begin{array}{c} {\rm CCVs} \\ {\rm Percent} \\ - \end{array}$	Percent Recovery	Date		
Param Total Selenium	Flag	$\frac{\rm Units}{\rm mg/L}$	Conc. 1.00	Conc. 0.998	Recovery 100	Limits 90 - 110	Analyzed 2009-04-15		
QC Batch: 58610			Date Analyze			·	yzed By: RR		
			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent			
D	Tol	TT ',	$\operatorname{True}$	Found	Percent	Recovery	Date		
Param Total Thallium	Flag	$rac{ m Units}{ m mg/L}$	Conc. 1.00	Conc. 0.978	Recovery 98	Limits 90 - 110	Analyzed 2009-04-15		
Standard (CCV-	2)								
QC Batch: 58610			Date Analyze	ed: 2009-04-	15	Analy	yzed By: RR		
			$\begin{array}{c} {\rm CCVs} \\ {\rm True} \end{array}$	${ m CCVs} \ { m Found}$	${ m CCVs} \ { m Percent}$	Percent Recovery	Date		
	Flag	$\operatorname{Units}$	Conc.	Conc.	Recovery	Limits	Analyzed		
Param	rag								

# Standard (CCV-2)

QC Batch: 58610 Date Analyzed: 2009-04-15 Analyzed By: RR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Zinc		mg/L	1.00	1.02	102	90 - 110	2009-04-15

## Standard (CCV-1)

QC Batch: 58615 Date Analyzed: 2009-04-16 Analyzed By: MN

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			$_{ m CCVs}$	$\frac{\text{CCVs}}{2}$	$_{ m CCVs}$	Percent	_
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	$\operatorname{Recovery}$	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	$\operatorname{Recovery}$	$\operatorname{Limits}$	$\mathbf{Analyzed}$
Phenol		$\mathrm{mg/L}$	60.0	63.8	106	80 - 120	2009-04-16
1,4-Dichlorobenzene (para)		${ m mg/L}$	60.0	60.2	100	80 - 120	2009-04-16
2-Nitrophenol		${ m mg/L}$	60.0	70.7	118	80 - 120	2009-04-16
2,4-Dichlorophenol		${ m mg/L}$	60.0	57.6	96	80 - 120	2009-04-16
${\it Hexachlorobutadiene}$		${ m mg/L}$	60.0	56.6	94	80 - 120	2009-04-16
4-Chloro-3-methylphenol		${ m mg/L}$	60.0	59.6	99	80 - 120	2009-04-16
2,4,6-Trichlorophenol		m mg/L	60.0	63.0	105	80 - 120	2009-04-16
${ m Acenaphthene}$		${ m mg/L}$	60.0	60.3	100	80 - 120	2009-04-16
Diphenylamine		${ m mg/L}$	60.0	60.8	101	80 - 120	2009-04-16
${ m Pentachlorophenol}$		$\mathrm{mg/L}$	60.0	55.8	93	80 - 120	2009-04-16
Fluoranthene		$\mathrm{mg/L}$	60.0	57.4	96	80 - 120	2009-04-16
Di-n-octylphthalate		$\mathrm{mg/L}$	60.0	57.2	95	80 - 120	2009-04-16
$\operatorname{Benzo}(a)$ pyrene		m mg/L	60.0	60.2	100	80 - 120	2009-04-16

					$\operatorname{Spike}$	$\operatorname{Percent}$	Recovery
Surrogate	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	$\operatorname{Dilution}$	${f Amount}$	Recovery	$\operatorname{Limit}$
2-Fluorophenol		62.5	$_{ m mg/L}$	1	60.0	104	80 - 120
Phenol-d5		61.2	${ m mg/L}$	1	60.0	102	80 - 120
Nitrobenzene-d5		63.1	${ m mg/L}$	1	60.0	105	80 - 120
2-Fluorobiphenyl		56.9	${ m mg/L}$	1	60.0	95	80 - 120
2,4,6-Tribromophenol		56.2	m mg/L	1	60.0	94	80 - 120
Terphenyl-d14		57.6	$\mathrm{mg/L}$	1	60.0	96	80 - 120

### Standard (ICV-1)

QC Batch: 58649 Date Analyzed: 2009-04-16 Analyzed By: RD

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Dissolved Solids		mg/L	1000	977.0	98	90 - 110	2009-04-16

# Standard (CCV-1)

QC Batch: 58649 Date Analyzed: 2009-04-16 Analyzed By: RD

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	$\operatorname{Date}$
Param	Flag	$_{ m Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Total Dissolved Solids		$_{ m mg/L}$	1000	972.0	97	90 - 110	2009-04-16

## Standard (ICV-1)

QC Batch: 58656 Date Analyzed: 2009-04-17 Analyzed By: RR

Report Date: May 6, 2009 Work Order: 9041322 Page Number: 69 of 76

HELSTF Diesel Spill Groundwater

		-	HELSTF Diesel	Spill Ground	water		
			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	Date
Param	Flag	Units	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
Dissolved Chromium		m mg/L	1.00	1.02	102	90 - 110	2009-04-17
Standard (CCV-1)							
QC Batch: 58656			Date Analyzed:	2009-04-17		Analy	zed By: RR
			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Dissolved Chromium	-	m mg/L	1.00	1.04	104	90 - 110	2009-04-17
Standard (ICV-1)							
QC Batch: 58667			Date Analyzed:	2009-04-17		Analy	zed By: RR
			$\mathrm{CCVs}$	CCVs	$\mathrm{CCVs}$	Percent	
			True	Found	Percent	$\operatorname{Recovery}$	$\operatorname{Date}$
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	Conc.	$\operatorname{Recovery}$	$\operatorname{Limits}$	${ m Analyzed}$
Total Calcium		mg/L	50.0	52.5	105	90 - 110	2009-04-17
Standard (ICV-1)							
QC Batch: 58667			Date Analyzed:	2009-04-17		Analy	zed By: RR
			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	$\operatorname{Date}$
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Potassium		$\mathrm{mg/L}$	50.0	50.3	101	90 - 110	2009-04-17
Standard (ICV-1)							
QC Batch: 58667			Date Analyzed:	2009-04-17		Analy	zed By: RR
			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	

## Standard (ICV-1)

Total Magnesium

Flag

Units

mg/L

Param

QC Batch: 58667 Date Analyzed: 2009-04-17 Analyzed By: RR

Found

 ${\rm Conc.}$ 

52.6

Percent

Recovery

105

Recovery

 ${\bf Limits}$ 

90 - 110

Date

 ${\bf Analyzed}$ 

2009-04-17

 ${\rm True}$ 

 ${\rm Conc.}$ 

50.0

Report Date: May 6, 2009 Work Order: 9041322 Page Number: 70 of 76

			HELSTF Dies	sel Spill Grou	rage ramoer, to or to		
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$\begin{array}{c} {\rm Date} \\ {\rm Analyzed} \end{array}$
Total Sodium		$\mathrm{mg/L}$	50.0	50.8	102	90 - 110	2009-04-17
Standard (CCV	<sup>7</sup> -1)						
QC Batch: 5866	7		Date Analyze	ed: 2009-04-	17	Analy	yzed By: RR
Param Total Calcium	Flag	Units mg/L	CCVs True Conc. 50.0	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits 90 - 110	Date Analyzed 2009-04-17
Standard (CCV	<sup>7</sup> -1)						
QC Batch: 5866	,		Date Analyze	ed: 2009-04-	17	Analy	yzed By: RR
			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$_{ m CCVs}$	Percent	
Param	Flag	Units	True Conc	$\begin{array}{c} { m Found} \\ { m Conc} \end{array}$	Percent Recovery	Recovery Limits	Date Analyzed
Param Total Potassium	$\operatorname{Flag}$	$\begin{array}{c} \rm Units \\ \rm mg/L \end{array}$	True Conc. 50.0	Found Conc. 53.7	Recovery 107	Recovery Limits 90 - 110	Date Analyzed 2009-04-17
			Conc.	Conc.	Recovery	Limits	${ m Analyzed}$
Total Potassium	7-1)		Conc.	Conc. 53.7	Recovery 107	Limits 90 - 110	${ m Analyzed}$
Total Potassium  Standard (CCV	7-1)		Conc. 50.0	Conc. 53.7	Recovery 107	Limits 90 - 110	Analyzed 2009-04-17

## Standard (CCV-1)

Flag

Units

mg/L

Param

Total Sodium

QC Batch: 58672 Date Analyzed: 2009-04-10 Analyzed By: MD

 $\mathrm{CCVs}$ 

Found

 ${\rm Conc.}$ 

54.5

 $\mathrm{CCVs}$ 

Percent

Recovery

109

Percent

Recovery

Limits

90 - 110

Date

 ${\bf Analyzed}$ 

2009-04-17

CCVs

 ${\rm True}$ 

 ${\rm Conc.}$ 

50.0

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		HEL	STF Diesel	Spill Groun	dwater		
Param Hexavalent Chromium	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits 90 - 110	Date Analyzed 2009-04-10
nexavaient Chromium		mg/L	0.500	0.501	100	90 - 110	2009-04-10
Standard (CCV-2)							
QC Batch: 58672		Date	Analyzed:	2009-04-10	)	Analy	zed By: MD
Param	$\operatorname{Flag}$	$\operatorname{Units}$	${ m CCVs} \ { m True} \ { m Conc.}$	$\begin{array}{c} { m CCVs} \\ { m Found} \\ { m Conc.} \end{array}$	CCVs Percent Recovery	$\begin{array}{c} \text{Percent} \\ \text{Recovery} \\ \text{Limits} \end{array}$	$egin{array}{c} { m Date} \ { m Analyzed} \end{array}$
Hexavalent Chromium		mg/L	0.500	0.496	99	90 - 110	2009-04-10
Standard (ICV-1)  QC Batch: 58694		$\operatorname{Dat}\epsilon$	e Analyzed:	2009-04-10	3	${ m Analy}$	zed By: AH
			${ m ^{CVs}}$ ue	${ m CCVs}$ Found	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param Flag	Units	Co		Conc.	Recovery	Limits	Analyzed
Ammonia-N	mg/L	5.	00	4.87	97	85 - 115	2009-04-16
Standard (CCV-1)							
QC Batch: 58694		$\operatorname{Dat}\epsilon$	Analyzed:	2009-04-10	j	Analy	zed By: AH
Param Flag	Units			CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$egin{array}{c} { m Date} \ { m Analyzed} \end{array}$
Ammonia-N	$\frac{\rm mg/L}$	5.		5.10	102	85 - 115	2009-04-16
Standard (ICV-1)  QC Batch: 58704		Date	e Analyzed:	2009-04-1	7	Analy	zed By: AH
		C	CVs	CCVs	CCVs	Percent	D-4-

## Standard (CCV-1)

Flag

Units

mg/L

Param

Total Cyanide

QC Batch: 58704 Date Analyzed: 2009-04-17 Analyzed By: AH

Found

 ${\rm Conc.}$ 

0.113

True

 ${\rm Conc.}$ 

0.120

 ${\bf Percent}$ 

Recovery

94

Recovery

 ${\rm Limits}$ 

85 - 115

Date

 ${\bf Analyzed}$ 

2009-04-17

Report Date: May	Н	Work Ord ELSTF Diesel	der: 9041322 Spill Ground	Page Number: 72 of 76				
Param	Flag	Uı	$_{ m nits}$	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	$egin{aligned}  ext{Date} \  ext{Analyzed} \end{aligned}$
Total Cyanide		mş	g/L	0.120	0.116	97	85 - 115	2009-04-17
Standard (CCV-QC Batch: 58713	1)		Г	ate Analyzed:	2009-04-20		Analy	zed By: KV
Ge Battan. 00110			2	CCVs True	CCVs Found	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param		Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Organic Carb	on		mg/L	50.0	48.8	98	80 - 120	2009-04-20
Standard (CCV-	2)							
QC Batch: 58713			D	ate Analyzed:	2009-04-20		Analy	zed By: KV
Param		Flag	$_{ m Units}$	$egin{array}{c} \mathrm{CCVs} \ \mathrm{True} \ \mathrm{Conc.} \end{array}$	CCVs Found Conc.	CCVs Percent Recovery	$egin{array}{l}  ext{Percent} \  ext{Recovery} \  ext{Limits} \end{array}$	$egin{aligned}  ext{Date} \  ext{Analyzed} \end{aligned}$
Total Organic Carb	on	Flag	mg/L	50.0	48.3	97	80 - 120	2009-04-20
Standard (ICV-1 QC Batch: 58752	)			Oate Analyzed:	2009-04-20	ı	Analy	vzed By: TP

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Total Mercury		$\mathrm{mg/L}$	0.00100	0.00102	102	90 - 110	2009-04-20

# Standard (CCV-1)

Analyzed By: TP  $QC\ Batch: \ 58752$ Date Analyzed: 2009-04-20

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	Found	Percent	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	Conc.	Recovery	Limits	${ m Analyzed}$
Total Mercury		$\mathrm{mg/L}$	0.00100	0.000955	96	90 - 110	2009-04-20

# Standard (ICV-1)

QC Batch: 58762 Analyzed By: JG Date Analyzed: 2009-04-14

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc.}$	Recovery	$\operatorname{Limits}$	$\mathbf{A}$ nalyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		90 - 110	2009-04-1
Carbonate Alkalinity		mg/L as CaCo3		244		90 - 110	2009-04-1
Bicarbonate Alkalinity		mg/L as CaCo3		6.00		90 - 110	2009-04-1
Total Alkalinity		mg/L as CaCo3		250	100	90 - 110	2009-04-1
-							
Standard (CCV-1)							
QC Batch: 58762		Date An	alyzed: 20	009-04-14		Analy	zed By: JG
			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	Date
Param	Flag	$\operatorname{Units}$	Conc.	Conc.	Recovery	Limits	$\mathbf{A}$ nalyzed
Hydroxide Alkalinity		mg/L as CaCo3		<1.00	<u>y</u>	90 - 110	2009-04-1
Carbonate Alkalinity		mg/L as CaCo3		236		90 - 110	2009-04-1
Bicarbonate Alkalinity		mg/L as CaCo3		8.00		90 - 110	2009-04-1
Total Alkalinity		mg/L as CaCo3		244	98	90 - 110	2009-04-1
QC Batch: 58769		Date An		009-04-20	0.077		zed By: AH
			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	Date
Param	Fl	~	Conc.	Conc.	Recovery	Limits	Analyzed
Total Kjeldahl Nitrogen - N		mg/L	5.00	4.87	97	85 - 115	2009-04-2
Standard (CCV-1)							
QC Batch: 58769		Date An	alyzed: 20	009-04-20		Analyz	zed By: AH
			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	$\operatorname{Date}$
Param	$\mathbf{Fl}$	ag Units	Conc.	Conc.	Recovery	$\operatorname{Limits}$	${ m Analyzed}$
Total Kjeldahl Nitrogen - N		mg/L	5.00	4.93	99	85 - 115	2009-04-2
Standard (ICV-1)							
,		Data An	alwand. 90	000 04 17		A no.1	zod B VV
QC Batch: 58776		Date An	aryzed: 20	009-04-17		Analy	zed By: KV
			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			True	Found	Percent	Recovery	Date
Daram	Floor	IInita	Cone	Cone	Dogorrows	Limita	Analyzad

Param

Nitrate and Nitrite as N

Flag

 $\operatorname{Units}$ 

mg/L

Conc.

0.200

Conc.

0.194

Recovery

97

Limits

85 - 115

Analyzed

2009-04-17

Report Date: May 6, 2009 Work Order: 9041322 Page Number: 74 of 76

HELSTF Diesel Spill Groundwater

Standard (CCV-1)

QC Batch: 58776 Date Analyzed: 2009-04-17 Analyzed By: KV

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
Nitrate and Nitrite as N		$_{ m mg/L}$	0.200	0.211	106	85 - 115	2009-04-17

Standard (CCV-1)

QC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Bromide		mg/L	5.00	4.88	98	90 - 110	2009-04-16

Standard (CCV-1)

QC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	Found	Percent	$\operatorname{Recovery}$	Date
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Chloride		$\mathrm{mg/L}$	25.0	24.2	97	90 - 110	2009-04-16

Standard (CCV-1)

QC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Fluoride		$\mathrm{mg/L}$	5.00	4.93	99	90 - 110	2009-04-16

Standard (CCV-1)

QC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JR

			$\mathrm{CC}\mathrm{Vs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	$\operatorname{Date}$
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Sulfate		m mg/L	25.0	23.8	95	90 - 110	2009-04-16

Standard (CCV-2)

QC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JR

			${ m CCVs} \ { m True}$	$\begin{array}{c} { m CCVs} \\ { m Found} \end{array}$	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
Bromide		$\mathrm{mg/L}$	5.00	4.90	98	90 - 110	2009-04-16

## Standard (CCV-2)

QC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Chloride		$_{ m mg/L}$	25.0	24.3	97	90 - 110	2009-04-16

# Standard (CCV-2)

QC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	$\operatorname{Recovery}$	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
Fluoride		$_{ m mg/L}$	5.00	4.96	99	90 - 110	2009-04-16

#### Standard (CCV-2)

QC Batch: 58966 Date Analyzed: 2009-04-16 Analyzed By: JR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	$\operatorname{Found}$	Percent	Recovery	Date
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc}$ .	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
Sulfate		mg/L	25.0	23.9	96	90 - 110	2009-04-16

## Standard (ICV-1)

QC Batch: 59150 Date Analyzed: 2009-04-27 Analyzed By: DS

			$\mathrm{CCVs}$	CCVs	$_{ m CCVs}$	Percent	_
			$\operatorname{True}$	$\operatorname{Found}$	$\operatorname{Percent}$	$\operatorname{Recovery}$	$\operatorname{Date}$
Param	Flag	${ m Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	$\operatorname{Recovery}$	Limits	${ m Analyzed}$
HMX		$\mu \mathrm{g/L}$	500	494	99	85 - 115	2009-04-27
RDX		$\mu { m g}/{ m L}$	500	493	99	85 - 115	2009 - 04 - 27
1,3,5-Trinitrobenzene		$\mu { m g}/{ m L}$	500	510	102	85 - 115	2009-04-27
1,3-Dinitrobenzene		$\mu { m g}/{ m L}$	500	508	102	85 - 115	2009-04-27
${ m Nitrobenzene}$		$\mu \mathrm{g}/\mathrm{L}$	500	499	100	85 - 115	2009-04-27
Tetryl		$\mu { m g}/{ m L}$	500	475	95	85 - 115	2009 - 04 - 27
TNT		$\mu { m g}/{ m L}$	500	502	100	85 - 115	2009 - 04 - 27
4-Amino-DNT		$\mu \mathrm{g}/\mathrm{L}$	500	477	95	85 - 115	2009-04-27
2-Amino-DNT		$\mu { m g}/{ m L}$	500	491	98	85 - 115	2009-04-27
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Work Order: 9041322	
ELSTF Diesel Spill Groundwater	

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			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	Analyzed
2,6-DNT		$\mu \mathrm{g/L}$	500	456	91	85 - 115	2009-04-27
2,4-DNT		$\mu { m g}/{ m L}$	500	479	96	85 - 115	2009-04-27
2-NT		$\mu { m g}/{ m L}$	500	551	110	85 - 115	2009-04-27
4-NT		$\mu { m g/L}$	500	495	99	85 - 115	2009-04-27
3-NT		$\mu { m g/L}$	500	440	88	85 - 115	2009-04-27

					$\operatorname{Spike}$	$\operatorname{Percent}$	Recovery
Surrogate	$\operatorname{Flag}$	$\operatorname{Result}$	$\operatorname{Units}$	Dilution	${ m Amount}$	Recovery	$\operatorname{Limit}$
1,2-Dinitrobenzene		478	$\mu \mathrm{g}/\mathrm{L}$	1	500	96	85 - 115

# Standard (CCV-1)

QC Batch: 59150 Date Analyzed: 2009-04-27 Analyzed By: DS

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	Found	$\operatorname{Percent}$	Recovery	$\operatorname{Date}$
Param	Flag	$\operatorname{Units}$	$\operatorname{Conc.}$	$\operatorname{Conc}$ .	Recovery	Limits	${ m Analyzed}$
HMX		$\mu \mathrm{g/L}$	500	451	90	85 - 115	2009-04-27
RDX		$\mu { m g}/{ m L}$	500	529	106	85 - 115	2009-04-27
1,3,5-Trinitrobenzene		$\mu { m g}/{ m L}$	500	448	90	85 - 115	2009-04-27
1,3-Dinitrobenzene		$\mu { m g}/{ m L}$	500	483	97	85 - 115	2009-04-27
${ m Nitrobenzene}$		$\mu { m g}/{ m L}$	500	511	102	85 - 115	2009-04-27
Tetryl		$\mu { m g}/{ m L}$	500	429	86	85 - 115	2009-04-27
TNT		$\mu { m g}/{ m L}$	500	527	105	85 - 115	2009-04-27
4-Amino-DNT		$\mu { m g}/{ m L}$	500	512	102	85 - 115	2009-04-27
$2 ext{-Amino-DNT}$		$\mu { m g}/{ m L}$	500	523	105	85 - 115	2009-04-27
2,6-DNT		$\mu { m g}/{ m L}$	500	441	88	85 - 115	2009-04-27
2,4-DNT		$\mu { m g}/{ m L}$	500	512	102	85 - 115	2009-04-27
2-NT		$\mu { m g}/{ m L}$	500	486	97	85 - 115	2009-04-27
4-NT		$\mu { m g}/{ m L}$	500	444	89	85 - 115	2009-04-27
3-NT		$\mu { m g}/{ m L}$	500	538	108	85 - 115	2009-04-27

					$\operatorname{Spike}$	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	$\operatorname{Result}$	$\operatorname{Units}$	Dilution	${f Amount}$	Recovery	Limit
1,2-Dinitrobenzene		491	$\mu { m g}/{ m L}$	1	500	98	85 - 115

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